

**HIV/AIDS KNOWLEDGE, ATTITUDES AND SEXUAL PRACTICES AMONG
INTELLECTUALLY IMPAIRED AND MAINSTREAM LEARNERS IN SELECTED
SCHOOLS IN OYO STATE, NIGERIA**

TOYIN JANET ADEREMI

**A thesis submitted in fulfillment of the requirement for the degree of Doctor of Philosophy
in Behavioural Medicine, School of Public Health, Nelson R. Mandela School of Medicine,
University of KwaZulu-Natal, South Africa**

September, 2011

As the candidate's supervisor I agree/do not agree to the submission of the thesis.

Signed

Date

CONTENTS

<i>List of figures and tables</i>	<i>xviii</i>
<i>Declaration</i>	<i>xxi</i>
<i>Acknowledgements</i>	<i>xxii</i>
<i>Dedication</i>	<i>xxiii</i>
<i>Abstract</i>	<i>xxiv</i>

INTRODUCTION	1
1.1 Background to the study	1
1.2 Statement of the problem	3
1.3 Justification for the study	5
1.4 Research questions	7
1.5 Aim of the study	8
1.6 Specific objectives	8
1.7 Hypotheses	9
1.8 Operational definitions	10
1.9 Structure of the thesis	14
THEORETICAL OVERVIEW AND A REVIEW OF THE LITERATURE	16
2.1 Introduction	16
2.2 Disability in perspective	16
2.2.1 Institutional response	18
2.2.2 Disability rights	21
2.2.3 Disability in Nigeria	23
2.2.4 Government approach to disability in Nigeria	26
2.2.5 Disability movements in Nigeria	29
2.3 Intellectual disability	30
2.3.1 History of intellectual disability	30
2.3.2 Intellectual disability in Africa	34
2.3.3 Classification of intellectual disability	35
2.3.3.1 ICD-10 classification	36

2.3.3.2 DSM-IV-TR classification	37
2.3.3.3 Classification based on degree of severity	39
2.3.3.4 2002 AAIDD classification	41
2.3.3.5 The ICF classification	43
2.3.4 Epidemiology of intellectual disability	44
2.3.5 Aetiology of intellectual disability	48
2.3.6 Health issues and quality of life of people with intellectual disability	50
2.3.6.1 Life expectancy	50
2.3.6.2 Physical and mental well-being	50
2.3.6.3 Physical activity	52
2.3.6.4 Other health-promoting activities	53
2.3.6.5 Access to and utilisation of healthcare services	54
2.3.6.6 Sexual health	55
2.3.6.7 Barriers to sexual health	58
2.3.7 Intellectual disability in Africa	61
2.4 Adolescence	70
2.4.1 Adolescents' risk-taking behaviours	71
2.4.1.1 Risk-taking behaviours of adolescents with disability	75
2.4.1.2 Risk-taking behaviours of adolescents with intellectual disability	76
2.4.2 Adolescents' sexual behaviours	77
2.4.2.1 Adolescents' sexual behaviours in Nigeria	79
2.4.2.2 Sexual behaviours of adolescents with disability	82
2.4.2.3 Sexual behaviours of adolescents with intellectual disability	84
2.4.3 Factors influencing sexual behaviours among adolescents	85
2.4.3.1 Individual factors	85
2.4.3.2 Environmental factors	90
2.4.4 Factors affecting sexual behaviours of adolescents with disability	93
2.4.5 The burden of sexually transmitted infections, including HIV, among adolescents	95
2.5 Programmes and their effectiveness in promoting safer sexual behaviours	99
2.5.1 Programmes' effectiveness in promoting safer sexual behaviours among adolescents	101

2.5.2 Programmes' effectiveness in promoting safer sexual behaviours among adolescents with disability	105
2.5.3 Effective sexuality education for people with intellectual disability	106
2.5.4 School-based sexuality education for adolescents in Nigeria	112
2.6 Overview of HIV/AIDS	114
2.6.1 HIV/AIDS in Nigeria	115
2.6.2 Challenges of measuring adolescents' sexual behaviours and HIV-related knowledge, attitudes and practices	118
2.6.2.1 HIV/AIDS knowledge and attitudes among adolescents in Nigeria	119
2.7 Disability and HIV/AIDS	121
2.7.1 Risk factors for HIV infection among people with disability	121
2.7.1.1 Lack of access to education	122
2.7.1.2 Poverty	122
2.7.1.3 Sexual activities and risky sexual behaviours	123
2.7.1.4 Lack of sexuality education	125
2.7.1.5 Inaccessible healthcare, including HIV/AIDS-related services	126
2.7.1.6 Low HIV/AIDS knowledge and risk perception	127
2.7.1.7 Sexual abuse	129
2.7.1.8 Stigma and social exclusion	130
2.7.1.9 Substance use	132
2.7.2 Intellectual disability and HIV/AIDS – a review of the literature	133
2.7.2.1 Geographical distribution of the studies	135
2.7.2.2 Focus of the studies	135
2.7.2.3 Early research efforts in the field	136
2.7.2.4 Low HIV/AIDS knowledge	137
2.7.2.5 Sexual activities	138
2.7.2.6 Low condom use	138
2.7.2.7 Low HIV risk perception	139
2.7.2.8 Sexual abuse	139
2.7.2.9 Sexuality and HIV/AIDS prevention education	139

2.8 Conceptual (Theoretical) framework	143
2.8.1 The Integrated Model for Change (I-Change Model)	143
2.8.2 The ABC Model	148
2.9 Conclusion	149
METHODOLOGY	150
3.1 Introduction	150
3.2 Study location	150
3.3 Study design	152
3.4 Scope of the study	154
3.5 Sampling procedures	155
3.5.1 Study population	155
3.5.2 Sampling strategy for the quantitative method	157
3.5.2.1 Sample size	157
3.5.3 Sampling strategies for the qualitative methods	158
3.5.3.1 FGD	158
3.5.3.2 In-depth interviews	159
3.5.3.3 Key informant interviews	159
3.5.4 Inclusion criteria	159
3.5.5 Exclusion criteria	160
3.6 Data collection methods and tools	160
3.6.1 Psychological measures	160
3.6.1.1 Draw-A-Person Intellectual Ability Test for Children, Adolescents, and Adults (DAP: IQ)	161
3.6.1.2 Raven’s Progressive Matrices	161
3.6.1.3. Vineland’s Social Maturity Scale	162
3.6.2 Quantitative methods	163
3.6.2.1 Development of structured questionnaire	163
3.6.3 Qualitative methods	166
3.6.3.1 Development of In-depth Interview guide	166
3.6.3.2 Development of Key Informant Interview guide	167

3.6.3.3 Development of Focus Group Discussion guide	168
3.6.4 Training of research assistants	168
3.6.5 Pilot study	169
3.6.6 Data collection	171
3.6.6.1 Draw-A-Person Intellectual Ability Test for Children, Adolescents, and Adults (DAP: IQ) administration	171
3.6.6.2 Raven’s Progressive Matrices administration	172
3.6.6.3 Vineland’s Social Maturity Scale administration	175
3.6.6.4 Questionnaire administration	175
3.6.6.5 Focus Group Discussions	176
3.6.6.6 In-depth Interviews	177
3.6.6.7 Key Informants Interviews	178
3.6.7 Validity and reliability of instruments	178
3.7 Data management and storage	179
3.8 Data analysis techniques	181
3.8.1 Qualitative data	181
3.8.1.1 Triangulation of methods	182
3.8.1.2 Data triangulation	183
3.8.2 Quantitative data	183
3.8.2.1 Statistical data analysis	183
3.8.3 Psychological measures analyses	186
3.9 Ethical considerations	186
3.10 Research dissemination	188
3.11 Conclusion	188
RESULTS	189
4.1 Introduction	189
4.2 Psychological measures	189
4.2.1 Draw-A-Person intellectual ability test for children, adolescents, & adults (DAP:IQ)	189
4.2.2 Raven’s Progressive Matrices	189
4.2.3 Vineland’s Social Maturity Scale	190

4.3 General descriptions of the sample	193
4.3.1 Demographics	193
4.2.2 Socio-behavioural characteristics	193
4.4 Results using quantitative method	196
4.4.1 HIV/AIDS awareness of learners	196
4.4.2 HIV transmission knowledge of learners	199
4.4.3 HIV risk perception of learners	201
4.4.4 Risky sexual exposures among learners	203
4.4.4.1 Inconsistent condom use with boy/girlfriends	203
4.4.4.2 Inconsistent condom use with casual sexual partners	204
4.4.4.3 Condom use during last sexual activity	205
4.4.4.4 Multiple sexual partners	206
4.4.4.5 Number of sexual partners in the last six months	207
4.4.4.6 History of rape	207
4.4.5 Substance use	210
4.4.6 Sexual experience/abstinence among learners	212
4.4.7 Relevance of the I-Change Model in predicting sexual abstinence	215
4.4.7.1 Relevance of the I-Change Model in predicting sexual abstinence among IIL	215
4.4.7.2 Relevance of the I-Change Model in predicting sexual abstinence among ML	218
4.5 Results using qualitative methods	222
4.5.1 Vulnerability to HIV infection	222
4.5.1.1 All human beings are vulnerable	222
4.5.1.2 Sexual beings	224
4.5.1.3 Lack of HIV/AIDS education	225
4.5.1.4 Sexual abuse and exploitation	227
4.5.1.5 Disability-related stigmatisation	228
4.5.1.6 Neglect	229
4.5.1.7 Low HIV risk perception	230
4.5.1.8 Poverty	231
4.5.2 Sexual behaviours	232

4.5.2.1 Reasons for having sex	232
4.5.2.2 Age of sexual partners	236
4.5.2.3 Limitations on sexuality	237
4.5.2.4 Ways of exploring sexuality	238
4.5.2.5 Low condom use	242
4.5.2.6 Sexual expectations and dreams	244
4.5.3 Barriers to HIV testing and treatment	245
4.5.4 Access to HIV/AIDS prevention education	249
4.5.5 Effective sexuality and HIV/AIDS education for IIL	254
4.6 Conclusion	256
DISCUSSIONS	257
5.1 Introduction	257
5.2 Psychological measures	257
5.3 Demographics and socio-behavioural characteristics	258
5.3.1 Demographics	258
5.3.2 Socio-behavioural characteristics	258
5.4 Themes emerging from the findings	261
5.4.1 Sexual behaviours	261
5.4.1.1 Sexual experience/abstinence among learners	261
5.4.1.2 Reasons for having sex	265
5.4.2 Predictors of sexual experience/abstinence among learners	269
5.4.2.1 Predictors of sexual experience/abstinence among IIL	269
5.4.2.2 Predictors of sexual experience/abstinence among ML	272
5.4.3 Higher risk of HIV infection among IIL than ML	274
5.4.3.1 HIV/AIDS awareness of learners	274
5.4.3.2 HIV transmission knowledge of learners	274
5.4.3.3 HIV risk perception of learners	275
5.4.3.4 Risky sexual exposures among learners	277
5.4.3.5 Substance abuse	284
5.4.4 Disability-related stigmatisation and neglect	285

5.4.5 Access of learners to HIV/AIDS prevention education and services	289
5.5 Challenges encountered in conducting FGDs among IIL	297
5.6 Conclusion	297
CONCLUSIONS AND RECOMMENDATIONS	298
6.1 Introduction	298
6.2 The study – a recap	298
6.3 Conclusions	300
6.4 Policy implications	302
6.4.1 The Nigerian government	303
6.4.2 Civil society/Non-governmental organisations	304
6.4.3 Researchers/institutions of higher learning	306
6.4.4 Development partners	306
6.5 Guidelines for developing tailored school-based sexuality and HIV/AIDS prevention education for learners with mild/moderate intellectual disability in Nigeria	307
6.6 Limitations and strengths of the study	309
6.7 Recommendations for future research	310
6.8 Concluding comments	312
<i>References</i>	<i>313</i>
<i>Appendices</i>	
<i>Appendix A: Informed consent procedure for learners with intellectual impairment</i>	<i>340</i>
<i>Appendix B: Focus group discussion guide</i>	<i>342</i>
<i>Appendix C: In-depth interview guide</i>	<i>348</i>
<i>Appendix D: Key informant interview guide for teachers of mainstream learners</i>	<i>355</i>
<i>Appendix E: Key informant interview guide for teachers of learners with intellectual impairment</i>	<i>361</i>
<i>Appendix F: Questionnaire</i>	<i>368</i>

LIST OF FIGURES AND TABLES

Figures

Figure 2.1: Interactions between the components of ICF	19
Figure 2.2: Overview of ICF components	20
Figure 2.3: Geographical distributions of studies	63
Figure 2.4: Distribution of studies by year	64
Figure 2.5: The Integrated Model for Change	147
Figure 2.6: The ABC Model	148
Figure 3.1: A map of Nigeria	151
Figure 3.2: The study area – Oyo State	152
Figure 4.1: Trends of age at sex initiation for ML and IIL	196

Tables

Table 4.1: Mean scores of learners in Draw-A-Person	190
Table 4.2: Mean scores of learners in CPM and SPM	191
Table 4.3: SPM percentile scores for ML	191
Table 4.4: CPM percentile scores for IIL	192
Table 4.5: Level of intellectual functioning of learners	192
Table 4.6: Demographics of learners	194
Table 4.7: Socio-behavioural characteristics of learners	195
Table 4.8: Differences in HIV/AIDS awareness of IIL and ML in respect of age groups, sex, religion, have boy/girlfriend, language and sexual experience	198
Table 4.9: Bivariate analysis of HIV transmission knowledge scores of learners	200
Table 4.10: Predictors of HIV transmission knowledge scores from generalised linear regression models of groups of learner, HIV information sources, school location, age, sex, and religion of respondents	200
Table 4.11: Bivariate analysis of HIV risk perception scores of learners	202

Table 4.12: Predictors of HIV risk perception from generalized linear models of group, living arrangements, having a boy/girlfriend, school location, knowledge score, and age of learners	203
Table 4.13: Predictors of inconsistent condom use with boy/girlfriend from binary logistic regression models of sex, religion, language, have a boy/girlfriend, knowledge, risk perception, and age group of learners	204
Table 4.14: Predictors of inconsistent condom use with casual sexual partners from binary logistic models of sex, religion, language, have a boy/girlfriend, knowledge, risk perception, age group, and group of learners	205
Table 4.15: Predictors of no condom use at last sexual activity from binary logistic regression models of group, sex, knowledge, risk perception, religion, and age group of learners	206
Table 4.16: Predictors of sometimes/rarely having multiple sexual partners from binary logistic regression models of sex, religion, language, have a boy/girlfriend, knowledge, risk perception, age group and group of learners	206
Table 4.17 Predictors of having more than one sexual partner in the last six months from binary logistic regression models of group, age, sex, knowledge, risk perception and religion of learners	207
Table 4.18: Predictors of history of rape in girls from binary logistic regression models of have a boyfriend, knowledge, risk perception, group and age of learners	208
Table 4.19: Bivariate analysis of group of learners by risky sexual exposures	209
Table 4.20: Substance use among learners	210
Table 4.21: Number of sexual partners in the last six months by cigarettes, alcohol, marijuana and other hard drugs use of learners	211
Table 4.22: Condom use at last sexual activity by cigarettes, alcohol, marijuana and other hard drugs use of learners	212
Table 4.23: Bivariate analysis of sexual experience of learners	214
Table 4.24: Predictors of sexual experience from binary logistic regression models of having a boy/girlfriend, HIV knowledge scores, HIV risk perception scores, group, religion, school location, sex, age group, cigarette, alcohol use of learners	215

Table 4.25: Questionnaire scale reliabilities (Cronbach's alpha), means, standard deviations and number of items on the scales of the I-Change Model for IIL	217
Table 4.26: Predictors of sexual abstinence among IIL from logistic regression models of factors of socio-behaviour, awareness, information, motivation, and intention	218
Table 4.27: Questionnaire scale reliabilities (Cronbach's alpha), means, standard deviations, and number of items on the scales of the I-Change Model for ML	220
Table 4.28: Predictors of sexual abstinence among ML from logistic regression models of socio-behavioural and motivational influences on sexual abstinence	221

DECLARATION

I Toyin Janet Aderemi declare that:

- i. The research reported in this thesis, except where otherwise indicated, is my original work;
- ii. This thesis has not been submitted for any degree or examination at any other university;
- iii. This thesis does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons;
- iv. This thesis does not contain other persons' writing, unless specifically acknowledged as being sourced from other researchers. Where other written sources have been quoted, then:
 - a. Their words have been re-written but the general information attributed to them has been referenced;
 - b. Where their exact words have been used, their writing has been placed inside quotation marks or in indented paragraph, and referenced;
- v. Where I have reproduced a publication of which I am an author, co-author or editor, I have indicated in detail which part of the publication was actually written by myself alone and have fully referenced such publications;
- vi. This thesis does not contain text, graphics or tables copied and pasted from the internet, unless specifically acknowledged, and the source being detailed in the thesis and in the References section.

Signed.....

Date.....

ACKNOWLEDGEMENTS

I thank the Ford Foundation International Fellowship Program for funding this study. The rare privilege of being a Ford fellow has opened many doors to me in the last few years.

I am grateful to my supervisor, Prof. B.J. Pillay for painstakingly guiding me through this study. He has been a great support and mentor to me.

Colleagues in the field also shared their study materials and knowledge with me. Thanks to Prof. Nora Groce and Dr. Myra Taylor for permission to adapt previous research instruments for use in this study; Dr. Jill Hanass-Hancock and Dr. Olagoke Akintola for advice in shaping my research ideas; and Prof. Senyo B-S.K. Adjibolosoo for his encouragement and scholarly input.

I appreciate being granted permission by the HIV/AIDS Desk, Oyo State Ministry of Education, to undertake this study. Thanks to the various school authorities, teachers, parents and the study participants for allowing me to carry out this study and for sharing their personal experiences with me. I highly appreciate your valuable contributions.

Thanks to the research assistants that went with me to the different parts of Oyo State to collect data, even when it was not convenient. I also appreciate the great input of my siblings – Bunmi, Banjo and Bukola – during the fieldwork. Thanks for believing in me.

A number of people rendered various forms of assistance to me in the course of this study. I am very grateful to Tonya Esterhuizen for the statistical analysis of the data. Katherine Evans, thanks for editing the thesis. Thanks to Blessing Chukuka and Gbolaro Olorode for helping to obtain permission from the Oyo State Ministry of Education; Musibau Titiloye for recruiting the research assistants; Nike Sulaiman and Ibukun Oladapo for helping with the fieldwork preparation. The Onyenwenyis, the Rycrofts and Kemi Adesuyi facilitated my transportation in the course of the research. Winnie Ogana, Yanga Mthiyane, Feyi Ademola-Adeoye, Sharlene Moodley, Bridget Akin-Otiko, Thamarly Zambuko, Lungi Myeni and the Ojewoles provided me with an enabling environment for studying away from home. John Ojuola showed interest in and financially supported my efforts. I appreciate your different but unique contributions.

Thanks to God; the giver of life and wisdom.

DEDICATION

To the loving memory of my late father

Mr. Aderemi Fashola

and

My mother

Mrs. Olanike Aderemi

For daring to invest so much in the education of a girl-child with disability

ABSTRACT

In the absence of a cure and/or vaccine, the best approach to HIV is to focus on prevention. However, preventative measures that are presently available in Nigeria do not target persons with intellectual disability despite their vulnerability to HIV infection. This study sought to compare the HIV knowledge, attitudes, and sexual practices of mildly/moderately intellectually impaired learners (IIL) and mainstream learners (ML) in Nigeria; to explore the contextual factors informing these, as well as both groups' exposure to HIV education. It also tested the relevance of the I-Change Model in predicting sexual abstinence among learners with intellectual disability. Findings can assist in developing tailored HIV prevention education for Nigerian learners with intellectual impairment.

This cross-sectional, comparative study utilised mixed methods to investigate HIV knowledge, attitudes, and sexual practices among mildly/moderately IIL and ML in Nigeria. Mildly/moderately IIL (300) and ML (300) within the age range of 12-19 years in special and regular schools completed a questionnaire based on the I-Change Model. Focus group discussions and in-depth interviews were used with learners to explore contextual factors informing their HIV knowledge, risk perception, sexual behaviours and access to HIV education and services. Key informant interviews were used as independent sources of the same information with their teachers.

Learners with intellectual impairment were less aware of HIV/AIDS than their non-disabled peers ($p < 0.001$), had lower HIV knowledge scores ($p < 0.001$) and lower HIV risk perception scores ($p < 0.001$). Sexual experience was reported by 79 (26.3%) of the IIL sample compared to 48 (16.0%) of the ML sample ($p = 0.002$). Girls with intellectual disability were 3.71 times more likely to report a history of sexual abuse than non-disabled girls ($p = 0.041$). Inconsistent condom use with casual partners ($p < 0.001$) and non-use of condoms during the last sexual activity ($p < 0.001$) was higher in IIL. The I-Change Model was most effective in predicting sexual abstinence among IIL, particularly regarding factors related to motivation and intention.

Intellectually impaired learners were more vulnerable to HIV infection due to neglect, poverty, sexual abuse/exploitation, stigmatisation, pressure from non-disabled peers, denial of HIV

education, and inaccessible HIV-related services. Teachers only provided them with sexuality and HIV education when sexual activity was suspected and/or from age 18. The content of such education comprised mainly warnings, misinformation and corporal punishment to instil fear and desexualise them. Thus, this group of learners was limited in the way they experienced and expressed their sexuality. Unlike with their non-disabled peers, teachers attributed sexual activity among IIL solely to natural urges without emotional involvement. Contrary to teachers' opinions, some IIL were involved in symbiotic, loving relationships with their II peers. In addition, those that were not yet in such relationships expressed the desire to find non-discriminatory partners in the future. They explored their sexuality through intimate relationships, sexual intercourse, peeping at the opposite sex, pornography, and masturbation. Condoms were less available to IIL than ML, and they lacked the self-efficacy to use them. They were also less available to II girls than II boys. Female learners with intellectual impairment often had older sexual partners due to sexual abuse/exploitation, unlike their non-disabled peers, who embarked on such relationships for financial/material gains.

The findings of this study indicated that IIL were sexual beings, just like their non-disabled peers, and at higher risk of HIV infection than the latter. Stigma and discrimination are the root causes of all the disadvantages/barriers that IIL experience in accessing HIV information, education and related services. Therefore, there is the need to put stigma reduction strategies in HIV response to safeguard the health of IIL. In addition, there is a need for the development of a gender-sensitive, tailored sexuality and HIV/AIDS educational format for learners with intellectual disability in Nigeria.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The human immunodeficiency virus (HIV) pandemic continues to be a major problem worldwide, and has escalated rapidly since the first case was identified in 1981. Acquired immune deficiency syndrome (AIDS) resulting from HIV infection is the leading cause of death among young adults, particularly in sub-Saharan Africa (SSA). In 2007 it was estimated that 33 million people live with HIV globally, 2.7 million new people became infected and 2 million people died of HIV-related conditions (UNAIDS, 2008). So far, HIV has claimed at least 25 million lives worldwide and is thus a great threat to development.

In 2007, SSA was home to two thirds of the world's HIV population (UNAIDS, 2008; WHO, 2008). Moreover, over two thirds of the new infections and over three quarters of global HIV-related deaths occurred in this region (WHO, 2008). Although recent reports state that HIV infection is either stabilising or declining in most of the sub-Saharan African countries, its prevalence is still very high in southern African countries (UNAIDS, 2008). As such, it might take a very long time for the region to recover from the poverty, loss of human potential, and threat to cultural values HIV imparts. The latter report further speculated that although its findings were encouraging, the HIV epidemic is unpredictable and people the world over must be prepared to tackle whatever surprises the epidemic may have in store.

HIV prevalence in Nigeria has currently stabilised at 3.1% (UNAIDS, 2008) but there are large variations with respect to HIV prevalence between states (Utulu & Lawoyin, 2007). Although the prevalence seems to be low, it is significant considering the population of Nigeria, which was estimated to be 140 million in January 2007; this makes the country the worst affected in West Africa (UNAIDS, 2008). According to Pennington (2007), heterosexual sex (80.0%) is the main mode of transmitting HIV infection in Nigeria. Factors contributing to this include lack of access to sexual health and HIV/AIDS information, among other things. HIV infection affects the

health, productivity and income of the masses. It is likely to predominantly impact on the vulnerable populations – people with disability (PWD), the poor, women and children.

Young people play an important role in controlling the HIV pandemic. The Joint United Nations Programme on HIV/AIDS (UNAIDS, 2008) estimated that young people accounted for nearly half of new infections globally in 2007. The current HIV response thus has to target young people using behaviour-change interventions that focus on providing information about HIV risks, prevention of exposure and necessary skills to bring about behaviour change. The same document posited that the age at which young men in Nigeria engaged in first sexual intercourse had decreased between 1996-2001 and 2002-2006.

Until recently, PWD – physical, sensory (blindness and deafness), intellectual and mental – have been denied access to HIV-related services despite their equal and ever-increasing exposure to HIV (Groce, 2004b). They are often assumed not to be at risk for HIV infection due to erroneous beliefs that they are sexually inactive, unlikely to use drugs/alcohol, and less likely to be raped than able-bodied people (World Bank, 2003). Groce (2005) asserts that individuals with disability are among the world's most stigmatised, poorest, and least educated citizens. Thus, they face lack of access to healthcare, poverty, social inequality and lack of human rights protection (Elwan, 1999).

About 650 million people are estimated to be living with various forms of disability worldwide, and 80.0% live in developing nations (Groce, Trasi and Yousafzai, 2006). In addition, if one assumes that 10.0% of any population has some form of disability, Nigeria, with a population of 140 million, would have 14 million citizens living with one form of disability or another. This group often lacks access to basic infrastructure, particularly in Nigeria, where the issue of disability remains largely charity-orientated rather than being orientated around human rights (Lang & Upah, 2008). There are currently no functional legal instruments to further the course of PWD in the country, despite Nigeria being a signatory to international legal instruments regarding the rights of this group. Therefore, Nigerians with disability are discriminated against in all spheres of life, including with HIV-related services. More often than not, such services are not accessible to PWD as a result of socio-attitudinal and physical barriers placed in their way by the non-disabled.

Moreover, Olaleye, Anoemuah, Ladipo, Delano, and Idowu (2007) suggest that in Nigeria, people with intellectual disability (PWID) are more marginalised than other PWD in accessing HIV-related services due to their cognitive disability. These individuals cannot learn incidentally. Currently in Nigeria, prominent HIV/AIDS advertising is too ambiguous for those with intellectual impairment to understand. In addition, their school curriculum does not include sexuality and HIV prevention education that non-disabled peers are exposed to. Parents either do not believe that they need such education or lack the skills to convey such issues in accessible formats (Di Giulio, 2003).

However, virtually nothing is known about the HIV knowledge and sexuality of learners with intellectual impairment in Nigeria. This study aims to compare levels of HIV/AIDS knowledge and sexuality among mildly/moderately intellectually impaired (II) children and adolescents and their non-disabled peers in Nigeria, and to identify how effectively the intellectually impaired learners (IIL) and mainstream learners (ML) are being reached by HIV/AIDS outreach programmes.

1.2 Statement of the problem

Comprehensive sexuality education of adolescents is a key component of the global HIV response. All categories of adolescents have the right to appropriate and informative sexuality and HIV prevention education, regardless of whether they have a disability or not. Until recently, adolescents with disability, like all other PWD, have been neglected in the HIV/AIDS outreach programmes due to the misconceptions that they are not sexually active, not likely to use drugs and alcohol, and are less likely to be sexually abused (Groce, 2003), and hence do not need sex education.

People with disability constitute the world's largest minority group (United Nations, 2006). Additionally, an estimated 75-150 million adolescents and youth with disability may be living in developing countries (Groce, 2004a). Poverty, social inequality, lack of human rights protection

and lack of access to healthcare (Elwan, 1999) place them at a higher risk of contracting HIV than their non-disabled peers.

Previous studies document that adolescents with disability are sexually active, like their peers without disability (Kef & Bos, 2006; Wiegerink, Roebroek, Donkervoort, Stam, & Cohen-Kettenis, 2006), and are over three times more likely to be raped than the non-disabled (Groce, 1999). Furthermore, the belief held in some societies that a man infected with HIV can be cured by having sex with a virgin is making such men have sex with women and girls with disability who are often assumed to be virgins (Groce & Trasi, 2004), thereby exposing them to the risk of contracting HIV. In addition, studies conducted in developing countries suggest that social sanctions and stigma associated with marrying PWD may lead to serial and multiple sexual relationships (Choruma, 2007; Mulindwa, 2003).

Furthermore, research shows that the HIV/AIDS knowledge of PWD in Africa is consistently low; for example, deaf populations in Nigeria and Swaziland wrongly believed that HIV can be contracted through kissing and airborne transmission (Groce, Yousafzai, Dlamini, Zalud, & Wirz, 2006; Groce, Yousafzai, & van der Maas, 2007). Another study in Uganda showed very low knowledge levels of mother-to-child transmission among males (7.0%) and females (10.0%) with disability (Mulindwa, 2003).

Although HIV prevalence studies among PWD are still sparse in Africa, a recent study in South Africa found HIV prevalence of 12.5% among sexually abused adolescents with intellectual disability (Meel, 2009). Similarly, among deaf populations in Cameroon, HIV prevalence increased from 4.0% in 2006 to 9.5% in 2008 (Touko, 2009) and, over a two-year period, 7.0% HIV prevalence was documented in Kenya (Taegtmeier et al., 2009). These studies serve as evidence that Africans with disability are indeed becoming infected with HIV, and at a higher rate than the general population. Another study in Uganda also reported high prevalence of STIs among PWD (Mulindwa, 2003), which is a known risk factor for HIV infection.

Moreover, adolescents with intellectual impairment are often more marginalised and less knowledgeable in sexual matters than other adolescents with disability due to difficulties with learning and retaining information (Aunos & Feldman, 2002), inadequate sex education

(McCabe, 1999), and inadequate information regarding the emotional and psychological aspects of intimate relationships. McGillivray (1999) found that young adults with intellectual disability possessed less knowledge about HIV and methods for risk reduction, less adaptive attitudes regarding AIDS, and lower self-efficacy to adopt safe sex practices than their non-disabled counterparts. In a South African study by Dawood, Bhagwanjee, Govender, and Chohan (2006), gaps in knowledge and misconceptions regarding HIV existence, transmission and cure were reported. The study also documents low self-efficacy and decision-making regarding condom use. Therefore, their lack of sexual knowledge may place them at higher risk of sexual abuse (Duke, 2006) and HIV infection than other PWD.

Dawood et al. (2006) further revealed that 14.0% of adolescents with mild intellectual disability are sexually experienced. Hanass-Hancock (2009b) and Swango-Wilson (2008b), in separate studies, also argue that PWID are vulnerable to sexual abuse and exploitation due to their lack of experience in making good social choices, and lack of protection and power. In addition, other studies indicate a higher incidence of STIs (van Schroyen Lantman-de Valk, Metsemakers, Haveman, & Crebolder, 2000) and substance abuse (McGillicuddy, 2006) among PWID than among the non-disabled. All these studies point to the higher vulnerability of PWID to HIV infection than other PWD and the non-disabled population.

Considering the low level of knowledge and higher risky sexual practices of PWID, there is a pressing need to provide them with cognitively-appropriate and comprehensive sexuality and HIV prevention education to reduce their exposure to HIV infection.

1.3 Justification for the study

Numerous studies had been undertaken to document HIV knowledge, attitudes, and sexual practices of Nigerian adolescents, and the shift is now towards determining effective interventions in this group, whereas only very few are available on adolescents with physical and sensory disability. Such studies are necessary to provide baseline information for tailored sexuality and HIV education for PWD, including PWID. Samowitz et al. (1989) suggest that

properly channelled sexuality and HIV/AIDS education will not only increase the knowledge of mildly/moderately intellectually impaired persons, but will also equip them with skills for modifying sexual behaviour. However, such educational packages are not yet available in Nigeria.

Despite a call for research on disability and HIV/AIDS by Groce (2004b), in Nigeria none of the prevailing studies are primarily targeted at adolescents with intellectual disability. Currently, there are only six published papers on HIV/AIDS and disability in Nigeria, three of which focused specifically on the deaf population (Groce et al., 2007; Olawuyi, 2006; Osowole & Oladepo, 2000). The remaining papers focused on the deaf and people with leprosy (Enwereji & Enwereji, 2008), the blind population (Otte, van der Maas & de Boer, 2008) and PWD generally (Olaleye et al., 2007). Two of these papers compared the deaf and blind populations with the non-disabled (Groce et al., 2007; Otte et al., 2008).

In SSA, only two studies that focused on adolescents with intellectual disability were found and both were undertaken in South Africa (Dawood et al., 2006; Gilbert, 2007). Only one (Dawood et al., 2006) utilised a questionnaire, which was based on constructs from other behavioural models but did not test the relevance of any models in predicting particular health-related behaviour. Moreover, Dawood et al. (2006) made an urgent call for comparative, qualitative and contextual studies to involve caregivers/stakeholders in this field so as to inform the development of tailored behaviour-change interventions. These are yet to be addressed by any study on intellectual disability and HIV/AIDS in SSA.

Thus, the current study will compare the level of HIV knowledge, attitudes and sexual practices of IIL and ML, explore the contextual factors informing their knowledge, attitudes and sexual practices and assess how effectively HIV/AIDS information reaches both groups. This will involve both quantitative and qualitative methods of data collection from IIL and ML and their teachers. Furthermore, it will test the relevance of the Integrated Model for Change (I-Change Model) in predicting sexual abstinence, an essential component of comprehensive sexuality and HIV education, among these two groups of adolescents. Even though the I-Change Model has been proven to be suitable in predicting health-related behaviours in non-disabled adolescents (de Vries et al., 2003; Huver, Engels, & de Vries, 2006; Taylor et al., 2007), it has not been

tested among adolescents with intellectual disability. Finally, it will suggest guidelines for HIV/AIDS education for the Nigerian IIL.

It is hoped that this study will contribute to knowledge in the area of the relevance of the I-Change model in predicting sexual abstinence as a means of providing HIV prevention (embedded in comprehensive sexuality education) for adolescents with intellectual impairment. It will also document the patterns and contexts of HIV knowledge, attitudes and sexual practices among IIL compared to those of their non-disabled counterparts in Nigeria.

1.4 Research questions

The study will answer the following research questions:

1. Is there a difference in the level of awareness (existence) of HIV/AIDS between mildly/moderately IIL and ML?
2. Is there a difference in knowledge of modes of transmission of HIV between mildly/moderately IIL and ML?
3. Do mildly/moderately IIL and ML differ in their perceived risk of HIV infection?
4. What are the differences in terms of risky sexual behaviours engaged in by mildly/moderately IIL and ML?
5. Does the prevalence of sexual abstinence differ between mildly/moderately IIL and ML?
6. Does HIV/AIDS messages/advertising effectively reach both groups of learners?
7. Is the I-Change Model relevant in predicting sexual abstinence in mildly/moderately IIL?
8. What are the contextual factors informing the HIV knowledge, attitudes and sexual practices of IIL compared to ML in Nigeria?

1.5 Aim of the study

The aim of the study is to identify and compare HIV knowledge, attitudes and sexual practices among mildly/moderately IIL and ML in the school setting; to investigate the contextual factors informing this, specifically for IIL; and to suggest guidelines for a school-based HIV education programme for IIL.

1.6 Specific objectives

The specific objectives are to:

1. Assess and compare the level of HIV awareness (about existence) among IIL and ML
2. Assess and compare the level of knowledge of HIV transmission among IIL and ML
3. Assess and compare the degree of perceived risk of HIV infection among IIL and ML
4. Identify and compare risky sexual behaviours among IIL and ML
5. Assess and compare the prevalence of sexual abstinence among IIL and ML
6. Investigate the contextual factors informing HIV knowledge, sexual practices, risk perception and sexual abstinence among IIL and ML
7. Test the relevance of the I-Change Model in predicting sexual abstinence among IIL
8. Identify how effectively each group of learners is being reached by HIV/AIDS outreach programmes
9. Make recommendations to health and education policy-makers and programme managers about accessible HIV/AIDS and sexuality educational formats for learners with intellectual impairment in Nigeria

1.7 Hypotheses

The following null and alternative hypotheses will be tested:

1. There is no significant difference between IIL and ML in respect of HIV/AIDS awareness – H_0
There is a significant difference between IIL and ML in respect of HIV/AIDS awareness – H_1
2. There is no significant difference between IIL and ML in respect of knowledge of transmission of HIV – H_0
There is a significant difference between IIL and ML in respect of knowledge of transmission of HIV – H_1
3. There is no significant difference between IIL and ML in respect of prevalence of sexual abstinence – H_0
There is a significant difference between IIL and ML in respect of prevalence of sexual abstinence – H_1
4. There are no significant differences between IIL and ML in respect of risky sexual behaviours – H_0
Significant differences exist between IIL and ML in respect of risky sexual behaviours – H_1
5. There is no significant difference between IIL and ML in respect of perceived risk of HIV infection – H_0
A significant difference exists between IIL and ML in respect of perceived risk of HIV infection – H_1

1.8 Operational definitions

Adaptive behaviour	The effectiveness or degree with which the individual meets the standards of personal independence and social responsibility expected of his/her age and social group
Age	Age (in years) at last birthday
Attitudes	<p>Attitude is a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour (Eagly & Chaiken, 1993)</p> <p>Attitudes of learner towards sexual abstinence in terms of advantages and disadvantages</p>
Cues to action	Learner's awareness of someone who is living with HIV/AIDS, of the severity of HIV infection, and his/her HIV status
Father's occupation	Father's employment or profession
HIV knowledge	<p>Learner's knowledge of HIV transmission through:</p> <ul style="list-style-type: none">• Sexual route: vaginal, anal, kissing• Non-sexual routes: sharing a cup or toilet with HIV-positive persons; blood contact with HIV-positive persons• Mother-to-child routes:<ul style="list-style-type: none">○ Pregnant woman to her baby before delivery○ Pregnant woman to her baby during delivery○ Through breastfeeding after delivery
Intellectual impairment	There are several definitions of intellectual impairment based on the framework that is considered, e.g. social psychology or cognitive psychology. For this study an

applied definition based on the Diagnostic and Statistical Manual for Mental Disorder – Fourth Edition (DSM-IV) and The American Association of Intellectual and Developmental Disabilities (AAIDD) is used. For our purposes intellectual impairment refers to intellectual functioning significantly below average, evidenced by an IQ of approximately 70 and below, and impairments/deficits for that age group in at least two of the following areas: communication, health, leisure time, safety, school, self-care, socialising, taking care of a home, or work. The onset of impairment must be before the age of eighteen (AAIDD, 2009; APA, 2000)

Intelligence quotient (IQ)	A score derived from a set of standardised tests developed to measure a person's cognitive abilities (intelligence) in relation to their age group
Intention	Learner's decision to remain abstinent (for those who were yet to initiate sex) or to practise secondary sexual abstinence (for those sexually experienced learners) till older or married
Language	Language with which a participant communicates with other people at home
Living arrangement	The person(s) that the learner lives with
Mainstream learners	Learners with normal intellectual functioning i.e without IQ barriers to learning
Mild intellectual impairment	Sub-average general intellectual functioning with IQ scores ranging from 50-55 to 70 (DSM-IV, APA, 2000)

Moderate intellectual impairment	Sub-average general intellectual functioning with IQ scores ranging from 35-40 to 50-55 (American Psychiatric Association (APA), 2000)
Mother's occupation	Mother's employment or profession
Outcome expectations	Learner's expectations regarding the practice of sexual abstinence
Religion	Religious beliefs of a participant (Christian, Islamic, Others)
Risk perception	Learner's perception of personal risk of HIV infection
Risky sexual exposures	Learner's risky sexual exposures indicated by: <ul style="list-style-type: none"> • More than one sexual partner in the last six months • No condom use during the last sexual encounter • Having multiple sexual partners • Inconsistent condom use with casual sexual partners • Inconsistent condom use with boy/girlfriends • History of forced sex
School location	Areas where learners' schools are located
Self-efficacy	Learner's self-belief of being capable of firmly saying 'no' to sex and having a boy/girlfriend for a long time without engaging in sex
Sex	Whether female or male
Sexual abstinence	No previous or current exposure to sexual intercourse
Sexual experience	Past and/or current exposure to sexual intercourse

Social influences

Learner's perceived norms, modelling and support by significant others regarding sexual abstinence indicated by:

- Perceived support from boy/girlfriends
- Perceived support from family and friends
- Having friends who practise sexual abstinence

Substance use

The use of cigarettes, alcohol, Indian hemp, or other hard drugs by the learner

1.9 Structure of the thesis

This thesis comprises six chapters. The first chapter introduces the subject by laying out the foundation for the issues to be addressed in the thesis. This is immediately followed by a review of existing literature in chapter two, as well as the conceptual/theoretical framework of the study. Basically, the literature review will look at previous studies in the fields of disability and intellectual disability. The focus is on global, African and Nigerian perspectives. Chapter two also examines issues of disability rights and offers a historical perspective. Moreover, intellectual disability is also discussed in terms of its current classifications, epidemiology, causes, and health issues. The chapter then examines adolescents with and without disability, including intellectual disability, in relation to risk-taking and sexual behaviours, again reflecting three perspectives – global, African and Nigerian. The burdens of STIs and HIV infection are presented, and the challenges of measuring adolescents' sexual behaviours and HIV-related attitudes, knowledge and practices are highlighted. Programmes and their effectiveness in promoting safe sexual behaviours in relation to HIV are discussed, with the emphasis being on adolescents with and without disability. School-based sexuality education for adolescents in Nigeria is also examined.

Furthermore, chapter two describes the current situation of the HIV/AIDS pandemic, globally, in SSA and Nigeria. It also examines literature on Nigerian adolescents' HIV/AIDS knowledge and attitudes before addressing the topic of disability and HIV/AIDS. It then outlines the risk factors for HIV infection among PWD. Thereafter, a systematic literature review of intellectual disability and HIV/AIDS is presented. Finally, the chapter presents and describes the I-Change Model as the theoretical framework that anchors the study.

Chapter three presents the methods utilised in this study, including descriptions of the study location, design, scope, and sampling procedures. As will be seen, this study employed mixed methods – quantitative and qualitative. This provides a comprehensive and triangulated exploration of the issues addressed by the study due to the different sources, thus improving the reliability and validity of the findings. The roles of the different methods are outlined in the chapter. The findings of the study are presented in chapter four, and these are discussed in detail in chapter five. The thesis ends by drawing conclusions from the findings and initiates

discussions in chapter six. This chapter also features a position statement, culminating in the policy implications of the findings of this study. In addition, guidelines for developing tailored school-based sexuality and HIV education for IIL are suggested. Finally, recommendations for future research are outlined before the concluding comments.

CHAPTER TWO

THEORETICAL OVERVIEW AND A REVIEW OF THE LITERATURE

2.1 Introduction

This chapter is divided into six sections: disability; intellectual disability; adolescence; HIV/AIDS; disability and HIV/AIDS; and includes the conceptual framework that anchors the study. It starts by examining the history of the popular models in the disability discourse and the emergence of global disability rights. The contextual analysis of disability in Nigeria is also discussed. The chapter explains the phenomenon of intellectual disability and focuses on its history, definition, classifications, aetiology, associated conditions and prevalence. It goes further to give an insight into the state of intellectual disability in Africa. Because the focus of this study is on adolescents, with and without disabilities, it examines relevant literature pertaining to global and Nigerian views of both groups of adolescents in terms of risk-taking behaviours, sexuality and sexually transmitted infections, including HIV, and sexuality education. The issues around HIV/AIDS at global, regional and national levels are briefly examined before the topic is discussed in relation to disability. The perspective of intellectual disability and HIV/AIDS is later elaborated on. The chapter closes by presenting the conceptual framework upon which the study is based, and which is also tested by this study.

2.2 Disability in perspective

Historically, people with physical, sensory, mental and intellectual impairment have been marginalised from mainstream life. Therefore, they lacked access to education, employment, social infrastructure, and transport. Often locked up in institutions where they would not be a burden to society and could be passive recipients of handouts, they were rendered ‘socially dead’ (E. J. Miller & Gwynne, 1972).

However, according to Finkelstein (1980), there was a time in history when they were not hidden from the public. Activities were mostly agrarian during the pre-industrial phase and, in spite of the low status attributed to individuals with impairments, they could be self-sufficient because they could work from home at their convenience. With the onset of the industrial revolution, everything became mechanised, fast and sophisticated and potential employees needed to be 'normal' people. Hence, the flexibility, slow pace and convenience that PWD were once afforded vanished, and many of them became unemployed. Barnes and Mercer (2003) argue that the breakdown of the traditional, local and family support system they once enjoyed broke. They needed to move out to look for jobs in rapidly growing industrial cities that had not advanced with PWD in mind, therefore rendering them at a disadvantage with respect to accessing the job market.

This disadvantage that stemmed from deviating from being deemed 'normal' thus placed PWD at the mercy of family, friends, philanthropists and welfare services, including segregated institutions, for support. This is what researchers like Finkelstein (1980) and Oliver (1990) refer to as the 'personal tragedy' of disability. According to Oliver (1990), this is the individual model of disability that is also medicalised. This approach locates disability with the individual; it is believed to be caused by impairments/functional limitations, and can be 'normalised' or at least made almost 'normal' by the medical and paramedical professionals. This is also what other disability activists and researchers refer to as the medical model of disability. The medical model of disability dictated the fate of persons with impairments in Western communities for most of the twentieth century; such persons were discriminated against in the physical, social, educational and employment environments.

The first radical movement against oppression being suffered by PWD in Britain was articulated in the Fundamental Principles of Disability (UPIAS, 1976) by the Union of the Physically Impaired Against Segregation. Their first argument entailed the distinction between the 'disability' that persons with impairments suffer:

Thus we define impairment as lacking part of or all of a limb, or having a defective limb, organ or mechanism of the body; and disability as the disadvantage or restriction of activity caused by a contemporary social organisation which takes no or little account of people who

have physical impairments and thus excludes them from participation in the mainstream of social activities (UPIAS, 1976).

Disability is then socially constructed, and is a result of social barriers and power relations but not attributable to impairments, as suggested by the medical model (Barnes & Mercer, 2003). Therefore, the social model is based on this (M. Oliver, 1990; Swain, Finkelstein, French & Oliver, 1993). Nevertheless, the social model is not the same as the social theory of disability but it reflects the experiences of people with disability (M. Oliver, 1990).

2.2.1 Institutional response

In response to the challenges posed by the social model, the World Health Organization (WHO, 1980) came up with the International Classification of Impairments, Disabilities and Handicaps (ICIDH). In an attempt to recognise the social aspect of disability, the following definitions were produced:

- Impairment: any loss or abnormality of psychological, physiological or anatomical structure or function
- Disability: any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being
- Handicap: a disadvantage for a given individual, resulting from an impairment or disability, that limits or prevents the fulfilment of a role (depending on age, sex, social and cultural factors) for that individual (WHO, 1980)

Barnes and Mercer (2003) argue that these definitions provoked criticism from disabled people's organisations in that the approach relies primarily on medical definitions and uses a bio-physiological definition of 'normality'; identifies impairment as the cause of both 'disability' and 'handicap'; and represents the environment as 'neutral', ignoring the significant role of disabling social, economic and cultural barriers in the social exclusion of people with impairments. For ICIDH to be of any relevance in freeing people with impairments from oppression and recognising their rights, it has to focus on their social exclusion.

In order to address what is most important to the target population, WHO then revised its classifications, and produced the International Classification of Functioning, Disability and Health (ICF) (WHO, 2001). This new document, by merging medical and social models, adopts a biopsychosocial approach that replaces ‘disability’ with activities, and ‘handicap’ with participation while retaining the concept of impairment in terms of body functionality and structure. Moreover, it recognises the influence of the environment in determining the level of an individual’s participation therein.

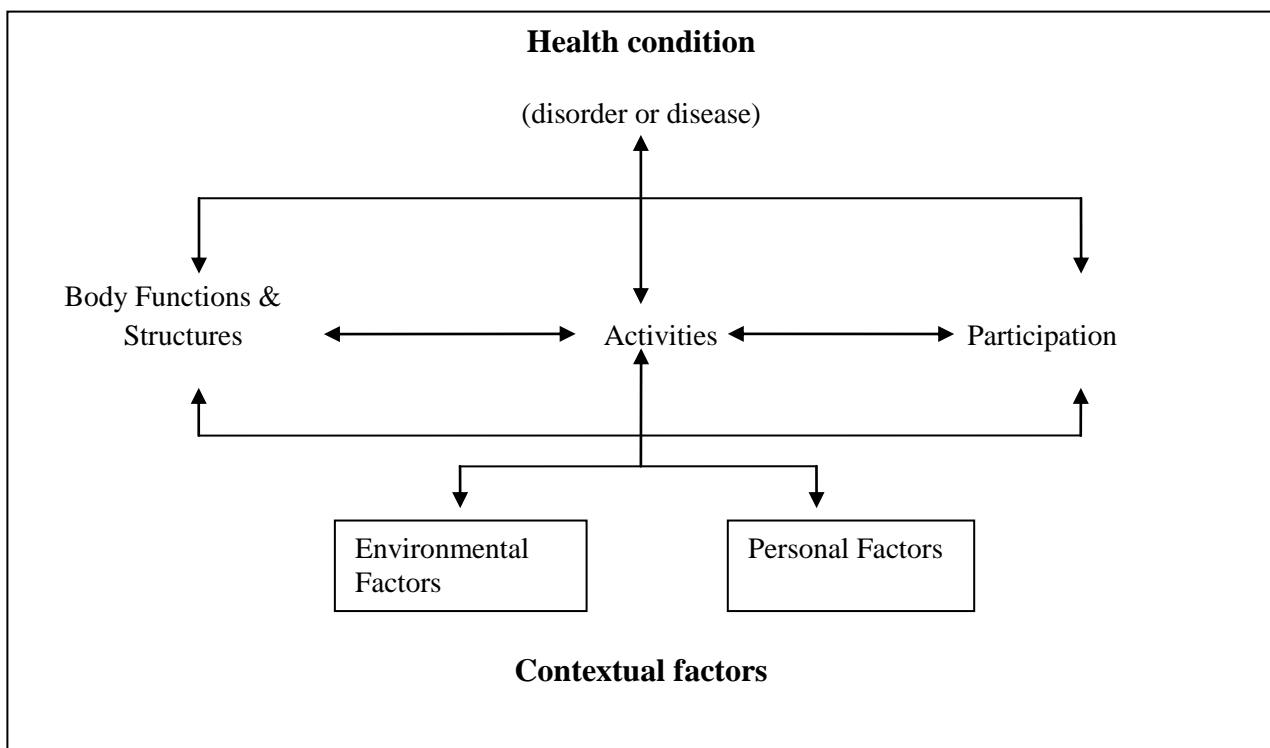


Figure 2.1: Interactions between the components of ICF (WHO, 2001)

DEFINITIONS

In the context of health:

Body functions are the physiological functions of body systems (including psychological functions).

Body structures are anatomical parts of the body such as organs, limbs and their components.

Impairments are problems in body function or structure such as a significant deviation or loss.

Activity is the execution of a task or action by an individual.

Participation is the involvement in a life situation.

Activity limitations are difficulties an individual may have in executing activities.

Participation restrictions are problems an individual may experience in involvement in life situations.

Environmental factors make up the physical, social and attitudinal environment in which people live and conduct their lives.

Figure 2.2: Overview of ICF components (WHO, 2001)

Personal factors are not classified in ICF because they are not part of a health condition or health states. However, they are included in Figure 2.1 to show their ability to impact on the outcome of disability-related interventions (WHO, 2001). According to the document, they include gender, age, coping styles, social background, education, profession, past and current experience, overall behaviour pattern, character and other factors that influence how disability is experienced by the individual.

Although the individual/medical model is still the definition of choice in policies around the world (Barnes & Mercer, 2003), the social model informs the operational definitions of Disabled People International and has shaped the development of the disability movement (M. Oliver, 1996). Whereas definitions and measurements still largely depend on the use of the ‘functional

limitations' approach, the social model has sensitised anti-discrimination policies to focus on removing the social barriers that exclude PWD from mainstream life, therefore opening up more opportunities for them than ever before.

2.2.2 Disability rights

The criticism of the medical model by disability activists gave rise to disability movements, and the subsequent paradigm shift to the social model which provides a platform for PWD to demand their rights at all levels. Barnes and Mercer (2003) relate that increased involvement of PWD in political processes such as elections, legislature and the courts, as well as other forms of political organisations and protests for radical social change, paved the way for civil rights and anti-discrimination legislation around the world.

Coming from a background of a long civil rights tradition, the United States of America (USA) was the first country to adopt the social model through the enactment of Section 504, which addressed disability issues into the 1973 Rehabilitation Act (Barnes & Mercer, 2003; Breslin, 2002). Barnes and Mercer (2003) argue that the enactment of Section 504 was not only borne out of the activism of PWD, but also gave them the necessary momentum for the enactment of the 1990 Americans with Disabilities Act (ADA) (Breslin, 2002). Since then, at least 56 other countries have enacted anti-discrimination laws to protect their citizens with disabilities (DREDF, 2000) and many of them also include related laws in their national constitutions. Conversely, much remains to be achieved regarding implementation and enforcement of these laws. Breslin (2002) opines that having such laws in place indicates that the countries are aware of discrimination against PWD.

At international level, disability issues are now recognised as rights-oriented rather than charity-oriented, and this suggests the reason for countries' enactment of disability laws. To further this cause, a number of international legal instruments were developed to usher in an era of full participation of PWD in society. These were heralded by the United Nations' (UN) declaration that 1981 was to be the International Year of Disabled Persons (UN, 2003-2004). As a follow-up

to this, in 1982 the World Programme of Action Concerning Disabled Persons was adopted by the General Assembly with the restructuring of disability policy into three areas: prevention; rehabilitation; and equalisation of opportunities. Subsequently, 1983-1992 was proclaimed the United Nations Decade of Disabled Persons. In order to ensure implementation of World Programme of Action in other regions of the world, the following regional decades of disabled persons were also proclaimed:

- 1993-2002: Asian and Pacific Decade of Disabled Persons; renewed for 2003-2012
- 2000-2009: Africa Decade of Disabled Persons
- 2006-2015: South America Decade of Disabled Persons

The General Assembly adopted the Standard Rules of Equalisation of Opportunities for Persons with Disabilities in 1993 to provide policy guidelines aimed at ensuring that PWD enjoy the same opportunities that others enjoy, but this instrument and its predecessors are not legally binding on countries (UN, 2003-2004). Therefore, to guarantee the human rights of PWD everywhere, a universal, legally binding instrument is needed. In response to the disability advocates' concern that there would be no enforceable obligations without a convention, the United Nations Convention on the Rights of Persons with Disabilities (CRPD) and its Optional Protocol was adopted on 13 December, 2006 and opened for signature on 30 March, 2007 (UN, 2006-2007).

The CRPD seeks to ensure PWD's enjoyment of the same human rights that others have by focusing on eight key areas (UN, 2008-2009c):

1. Respect for inherent dignity, individual autonomy, including the freedom to make one's own choices, and independence of persons
2. Non-discrimination
3. Full and effective participation and inclusion in society
4. Respect for difference and acceptance of PWD as part of human diversity and humanity
5. Equality of opportunity
6. Accessibility
7. Equality between men and women

8. Respect for the evident capacities of children with disability and respect for the right of children with disability to preserve their identities

The Convention and its Optional Protocol came into force on 3 May, 2008 after the 20th ratification and 10th ratification of the Optional Protocol (UN, 2008-2009b). As of 14 October, 2009, there were 143 signatories and 71 ratifications of the Convention; and 87 signatories and 45 ratifications of the Optional Protocol (UN, 2008-2009a). Nigeria signed both the Convention and the Optional Protocol on the same day it was opened for signature, but has yet to ratify any of them (UN, 2008-2009a).

2.2.3 Disability in Nigeria

Disability is an evolving concept with no universally agreed definition. However, drawing from 'Article 1' of the CRPD, disability can be defined as long-term physical, mental, intellectual or sensory impairment which, in interaction with various barriers, may hinder one's full and effective participation in society on an equal basis with others (UN, 2006). Yet, being a social construct, the definition of disability and how PWD are perceived and treated varies according to culture, social norms, time, attitudes and existing policies. What is accepted as a disability in one place and time may be different in others.

In Nigeria, disability is often associated with visible loss of or defect in parts of the body. That's why somebody in Nigeria with a mild impairment like short-sightedness will not be regarded as having a disability. However, this is problematic. Such people have impaired vision but are seldom or only marginally excluded from participating in society life. Another example is people with albinism, who, despite the fact that they have a skin condition (impairment) that makes other people discriminate against them, are never considered to have a disability. Furthermore, in Nigeria this group does not identify with PWD. Rather, they form a different association to address the discrimination that they face and to affirm their separate identity.

Societal attitudes in Nigeria make some people not want to identify with disability. In many Nigerian cultures, PWD are looked down upon regardless of their level of education or affluence. For example, the Yoruba people will say ‘irinisi ohun ni isenilojo’ (your appearance determines the kind of respect you are accorded). So, if someone has an impairment and does not meet the societal expectation of ‘normality’, s/he is immediately assigned a sickly and/or low status role, even when such person is wealthier/healthier than those judging him/her. Abang (1988) notes the unequal opportunities afforded PWD among the Yoruba tribe by affirming that PWD are not allowed to become kings, irrespective of their position in the society. Typical reactions to such people vary from pity and low expectations to hatred.

In addition, in Yoruba folklore evil spirits are usually depicted as having impairments/missing body parts such as an eye, a leg or having unusually thin limbs. This reflects the belief of the people and this is applied to persons with impairments. Hence, they are seen as people who are evil, are being punished by the gods due to their sins in a previous life or those of their parents, or as having broken a taboo, either intentionally or unintentionally (Ademokoya & Ben-Stowe, 2007). This can be explained by Nicholis’s (1993) assertion that ‘social solidarity is a primary value and Africans tend to see a correlation between illness and social distance’. According to Ademokoya and Ben-Stowe (2007), this can be prevented by expectant parents paying attention to cultural regulations. Similarly, Nicholis (1993) points out that the Igede people of Benue State in Nigeria believe that a child born with deformity is a contradiction of the natural order of creation, which is pure. In times past, such children were therefore killed at birth because they were perceived to be dangerous to the society.

Pregnant women in Nigeria hardly want to interact with PWD due to the belief that the ‘evil spirit’ in that person could replace their ‘normal’ foetuses so that they give birth to babies with impairments. In fact, one of the research assistants for this study, a married woman of reproductive age, commented that she would not have taken part in the study if she had been pregnant at the time because she didn’t want to give birth to a child with disability. Apart from being viewed as bringing shame to the family, Mallory (1993) points out that children with disability are considered to be of low value because they are likely to be a drain on the family resources and will not be able to financially contribute to the family. Thus, it is not surprising

that parents in Nigeria sometimes abandon children with deformities, or give them to grandparents who are willing to care for them.

However, Nicholis (1993) argues that Nigerian traditional beliefs do not always equate disability with evildoing or witchcraft. He relates that they are more tolerant of disability resulting from life experiences like accidents and take good care of such people. Nicholis (1993) further points out that Yoruba history also records that Obatala is a deity that was involved with creation, and that he was drunk on the day that he created the albinos, the crippled and the blind. As a result, the worshippers of Obatala have special regard for people with these kinds of disability. However, the undertone remains that they are 'abnormal' people created by mistake because a deity acted irresponsibly.

Furthermore, Abang (1988) notes that the Hausa tribe in Northern Nigeria possess a more positive attitude towards disability, which is seen as the will of God, hence there exists the need to treat PWD with kindness. She also relates a Tiv (tribe predominantly residing in the middle-belt of Nigeria) folk tale in which the first chief of the land enacted a law 'that no deformed children should be born anywhere except in his village where they could be cared for as was their custom'.

Nevertheless, it is possible that more people in Nigeria may want to identify with disability if there are special benefits as a result of functional disability policy and laws, as is the case in a few African countries. As such, the definition of disability in Nigeria may become broader, accommodating those who, for now, do not want to come under that umbrella. Presently, however, there is nothing attractive about having a disability in Nigeria. On the contrary, the associated discrimination and stigma is highly undesirable and puts people off identifying with PWD.

The discriminatory attitudes described above are reflected in the way the Nigerian government handles matters related to disability and PWD. The lack of political will to improve the lives of Nigerians with disability is demonstrative of the beliefs and attitudes of the larger society where PWD are treated with contempt rather than as equal citizens.

2.2.4 Government approach to disability in Nigeria

Availability of good quality data is central to the formulation and implementation of policies. Mont (2007) laments that ‘high quality, internationally comparable data on disability that is important for the planning, implementation, monitoring, and evaluation of inclusive policies is often not available.’ This is particularly the case in developing countries of Africa, where disability statistics are often non-existent or unreliable. He further stresses that it is difficult to estimate disability prevalence statistics that are understandable and internationally comparable due to the varied utilisation of different disability definitions, methodologies of data collection and variation in the quality of study design. In addition, he argues that there is further complication because there is no single correct disability definition; the nature and severity of disability greatly varies and the measurements of disability differ depending on the purpose it is intended for.

The United Nations estimates that about 600 million people live with disability globally (UN, 1993) and that 10.0% of any population has some form of disability. According to Mont (2007), the UN 10.0% estimate is in line with data from developed countries and recent studies from developing countries, which suggest 10.0-12.0% prevalence. However, Fujifura, Park, and Rutkowski-Kmitta (2005) argue that the new global prevalence of 600 million is just a revision based on the controversial 10.0% estimate. In addition, persons living in the developing countries are more exposed to conditions that result in disability than those in the developed countries due to lack of good healthcare, war, poverty etc. This is corroborated by Helander’s (1998) claim that an estimated 80.0% of PWD live in developing nations.

Nigeria is a developing country with a population of about 140 million. The leading causes of disability in the country include communicable and non-communicable diseases, poor healthcare services, road traffic accidents, poverty and conflicts. According to the 1991 census, prevalence of disability in Nigeria was 0.5%. Questions based on a checklist of impairments were adopted. According to Mbogoni (2002), this method has been shown to yield very low estimates of disability prevalence (less than 2.5%) because the focus was on severe types of impairments whose prevalence is low in the general population. She further reported that the broad categories used were:

Nature of disability

- Not disabled
- Deaf
- Dumb
- Deaf and dumb
- Blind
- Crippled
- Mentally retarded/lunatic
- Other: specify

Apart from the questions being focused on severe impairments whose prevalence is usually low, careful analysis of the language of the questions suggests that many households would not declare if they had persons that fell into any of the categories. The language was 'labelling' and derogatory and, in Nigeria, where disability is highly stigmatised, this method was likely to have introduced response bias into the census, thereby contributing to the low prevalence reported.

Similarly, the Nigeria 2006 census included disability codes but the response rate was very poor (Fujifura, Rutkowski-Kmitta, Owens, Corbin, & Mersereau, n.d.). As such, the country currently does not have a reliable national disability statistic, and this compounds the problem of planning and evaluating services provided by the public sector (Lang & Upah, 2008). Although such data is critical for policy-making, it is not an excuse for not making provisions that will ensure equality between Nigerians with and without disability.

The Nigerian government responded to the Standard Rules on Equalization of Opportunities for Persons with Disabilities by enacting a civil anti-discrimination law called the Nigerians with Disabilities Decree (NDD) 1993 ('Nigerians with Disability Decree', 1993), which has never been implemented. This is not surprising as its foundation is not appropriate, and it looks more like a quick-fix. The instrument defined disabled persons as ('Nigerians with Disability Decree', 1993):

A person who has received preliminary or permanent certificate of disability to have condition which is expected to continue permanently or for a considerable length of time

which can reasonably be expected to limit the person's functional ability substantially, but not limited to seeing, hearing, thinking, ambulating, climbing, descending, lifting, grasping, rising, any related function or any limitation due to weakness or significantly decreased endurance so that he cannot perform his everyday routine, living and working without significantly increased hardship and vulnerability to everyday obstacles and hazards.

To start with, it says 'the person is vulnerable to obstacles and hazards due to [a] condition which limits his [or her] functional ability,' suggesting that impairment is the cause of disability. It also gives authority to a physician to confirm disability. Therefore, this definition fails to recognise the role of political choices in shutting persons with impairments out of mainstream life.

Moreover, NDD covers areas such as health, education, vocational rehabilitation and employment, housing, accessibility, transportation, social services, sports and recreation, telecommunications, and voting access. It makes provision for legal services by planning to establish a National Commission for People with Disabilities for the enforcement of the provisions made in the decree. As a follow-up to the decree, two Bills for Acts to establish a National Commission for Handicapped Persons and to provide special facilities for use by handicapped persons in public buildings have been waiting to be passed into law in the National Assembly since 2000. Though the decree makes vague statements without mapping out the strategies to be adopted and implemented, it fails to state what constitutes discrimination or equality and, 16 years down the line, the Commission to enforce its provisions is yet to be established.

Consequently, Nigerians with disability face institutional, architectural, attitudinal, educational, transport-related and informational barriers on a daily basis. No provisions are made for integration and inclusion of PWD. Segregation and marginalisation still flourish because disability is perceived as being more of a charity than a human rights issue. As a result, from the public-policy perspective, there is a prevailing attitude that PWD should be 'cared for' (Lang & Upah, 2008). The authors note that the public policy environment in Nigeria is characterised by a lack of accountability and transparency in public service delivery, which poses a challenge to the

rights-based approach to disability issues necessary to facilitate and promote social inclusion of Nigerians with disability.

2.2.5 Disability movements in Nigeria

According to Lang and Upah (2008), ‘Disabled People’s Organisations (DPOs) in Nigeria lack organisational capacity to effectively lobby their respective governments to claim their basic human rights.’ Currently, two national umbrella DPOs claim to represent the interests of Nigerians with disability: the Joint National Association of Persons with Disabilities (JONAPWD) formed in 1992; and the Association for Comprehensive Empowerment of Nigerians with Disabilities (ASCEND) formed in 2002. There are also other DPOs that focus on single impairments. It is difficult for all of these DPOs to speak collectively in order to realise a rights-based approach to disability in Nigeria because of divisions among them (Lang & Upah, 2008). Besides, these DPOs still operate under the ‘charity/welfare’ model led by middle-class, urban elites (Lang & Upah, 2008), and have little or no accountability and transparency.

Issues of disability are being taken care of at national level by the under-funded Ministry of Women Affairs and Social Development. It is also not unusual to find wives of political office holders at all levels ‘taking care of the disabled people’ by spending public funds that they do not account for and giving ‘handouts’ to this group of people with no consideration for sustainable development. Lang and Upah (2008) reveal that six states have enacted disability legislation but lack effective monitoring and evaluation mechanisms to assess or benchmark their utility. In addition, nine states (including Oyo State) now have Special Advisers to the governors on disability issues. Lang and Upah (2008) maintain that these political office holders also operate under the ‘charity/welfare model’ and their effectiveness is not felt by the majority of the people they claim to be representing in the various states.

Until Nigeria adopts a rights-based approach to disability issues, at all levels, by enacting a comprehensive disability law and puts in place the machinery to ensure its enforcement, the country will remain discriminatory towards PWD. It is hoped that the enactment of such legal

instrument will provide a platform for Nigerians with disability to fight for their human rights and become integrated into mainstream life in the country. The DPOs in Nigeria also have to come together to form a formidable alliance that could take the case of PWD forward. Their focus should be on improving the livelihoods of the people they represent instead of indirectly fighting for their own pockets, as is the case right now. The failure of the rights-based approach to disability matters in Nigeria is the failure and shame of the leaders of the disability movements.

2.3 Intellectual disability

Harris (2006) defines intellectual disability as an intellectual and adaptive cognitive disability that begins early in life during the developmental period. The American Association of Intellectual and Developmental Disabilities (AAIDD) (2009) stresses that the limitations in present functioning must be considered within the context of the community environment typical of the individual's age, peers and culture.

Intellectual disability is a dynamic condition, hence improvement in functioning can be achieved based on the environmental support available to the individual (Harris, 2006). He also affirms that intellectual disability does not imply a category of a single cause, mechanism, clinical course or prognosis but can result from heterogeneous causes such as genetic and metabolic disorders, as well as trauma to the nervous system at birth or later in the developmental period.

2.3.1 History of intellectual disability

Harris (2006) gives a historical account of intellectual disability in his book, titled *Intellectual disability: understanding its development, causes, classification, evaluation, and treatment*. He sheds light on the development of the concept, institutionalisation, the legal rights of PWID, and de-institutionalisation.

According to the author, the history of intellectual disability dates back to 1300 B.C.-476 A.D., when Greeks practised infanticide due to a belief among ancient Greeks and Romans that congenital deformity was a sign that a god was displeased with the parents. He further notes that this era witnessed marginalisation and exclusion of PWD, with those with intellectual disability being denied their rights due to the perceived severity of their disability. During the Middle Ages (476 A.D.-1500 A.D.), both positive and negative perceptions of intellectual disability were recorded. Some thought that disabilities were demonic in origin and required cures from the clergy, whereas another line of thought was more sympathetic and adopted community support of PWD. The idea of institutionalisation of persons with intellectual impairment also started in the Middle Ages, with the establishment of religious hospices in countries like France, Syria and Turkey. In addition, this era marked the beginning of biological aetiology of intellectual disability and the distinction between intellectual and mental disability, though this was for the purpose of property law, which did not favour PWD.

The scientific approach that emerged at the beginning of the seventeenth century paved the way for the systematic study of intellectual disability (Harris, 2006). This new approach opened people's eyes to poverty among PWD, and the English Poor Law subsequently made provision for them. Though accompanied by stigma, the administration of welfare was no longer principally the responsibility of families but rather relied on community support. Hence the development of institutions for PWD in the United States (US) started in 1652 and continued slowly until the 1820s.

He states further that the eighteenth century witnessed a greater trend towards institutionalisation as a result of intellectual revolution associated with the Renaissance and the Enlightenment periods. Human beings had opportunities to become educated and it was widely believed that humankind was capable of altering the natural order. The development of professions then led to the establishment of more schools and institutions in Europe and US.

In the nineteenth century the first attempt to educate somebody with intellectual disability occurred. Jean-Marc-Gaspard Itard showed that it was indeed possible to educate somebody with intellectual disability by using specialised education and behaviour treatment. His action led to more organised education for the intellectually impaired, first in Switzerland, and later in Europe

and the US. Following Itard, Seguin developed a physiological method to prove that intellectual disability is a condition that starts at an early age and is irreversible. He also proposed that severely intellectually disabled children could benefit from normal classroom education through institutionalisation.

Institutions for the training of individuals with intellectual disability proliferated in the nineteenth century in Europe and the US. The first institution specifically for intellectual disability opened in the US in 1848. This was the solution proffered for the management of social problems and changes that accompanied urbanisation and the influx of immigrants to the US at that time. However, many of the PWID trained in these institutions had been productive in their communities and became unemployed following the Civil War and the economic recession. Consequently, less emphasis on education and return to the community by the institutions and the negative attitudes of the general population towards those with intellectual impairment led to the suggestion of lifelong institutionalisation. Despite Howe's and Seguin's support for community living for this category of people, the governments were adamant in supporting lifelong institutionalisation, emphasising the institutions' economic viability.

Furthermore, new techniques for diagnosis, treatment and education for all types of disability were developed. Those with similar types of disability began to identify with each other and formed groups. The first classification of intellectual disability was produced by scientists who established multiple aetiology, as well as different levels of the condition.

Harris (2006) refers to the twentieth century as the era of intellectual testing. By this time, it had been documented that there were 21 countries that operated 171 institutions for PWID all over the world. Psychometric tests were developed in 1905 by two French physicians, Alfred Binet and Theodore Simon, because a means to select children for specialised education based on their abilities was needed. The tests were introduced in the US in 1912 by Henry Goddard, specifically for diagnosing intellectual disability. The intelligence tests soon replaced the individualised clinical evaluation due to their objective and scientific nature. Later, a tripartite classification: idiots (mental age < 2 years), imbeciles (mental age < 7 years), and morons (mental age < 12 years) was proposed by the Committee on Classification of the Feeble-Minded of the American Association of Mental Deficiency.

This new development, coupled with an interest in eugenics, gave rise to more emphasis on the study of the heredity of intellectual disability. The eugenics movement proposed that intellectual disability was hereditary and reportedly higher among criminals and the poor. Therefore, intellectual disability was concluded to be the cause of antisocial behaviour. The interface between intelligence and life experiences like poverty, neglect, early mistreatment and limited cognitive capacity and their relationship with antisocial behaviour was overlooked. Intelligence tests developed after 1900 were said to serve both positive and negative purposes: they were used to place children in special education classes and to discriminate against immigrants entering the US on a class basis. The negative stereotypes applied to PWID climaxed with Goddard's study of the Kallikaks. The study linked antisocial behaviour to intellectual impairment, and proposed that it was hereditary rather than socially transmitted. People with mild intellectual disability were then declared dangerous to society and a reservoir of even more intellectually disabled persons due to their sexual promiscuity. This marked the introduction of sterilisation of PWID in institutions.

A few researchers like Fernald and Wallace carried out studies that dispelled the misconceptions surrounding deviance in PWID (Harris, 2006). They showed that only about 8.0% of children with intellectual disability had behavioural problems and also disputed the assumed link between intellectual disability and criminality. Some inmates of institutions were thus discharged to live in communities, under the guardianship of relatives, friends and volunteers.

Harris (2006) relates further that scientific studies flourished during this time despite eugenics and the abuse perpetrated in institutions, which led to the finding that phenylketonuria is a metabolic disorder that results in intellectual disability and is reversible through proper diet. Efforts to research other aetiology of intellectual disability were then intensified. Parents began to advocate remedial programmes for their wards with intellectual disability, and came together to form the National Association for the Retarded Children in the US (now The Arc of the United States). President J.F. Kennedy's interest in PWID, brought about through the intervention of his sister, Eunice Kennedy Shriver, was a major breakthrough for PWID in the US. This culminated into legislation to improve the standard of living of PWID in all 50 states. The principle of normalisation was introduced. With better access to education and treatment,

residents of institutions were allowed to live in the communities, and many of the institutions closed down. President J.F. Kennedy set up University Affiliated Research Centres for the study of intellectual disability in all 50 states, which are still in existence today.

With the advent of international legal instruments, the barriers preventing PWD from leading prosperous lives were broken down. Even though there are still a few institutions in some states in the US, the living conditions therein have improved tremendously over the years.

2.3.2 Intellectual disability in Africa

Research into the area of intellectual disability is sparse in developing countries in Africa. Little is known about the status afforded to PWID in developing countries (T.R. Parmenter, 2008). As noted by T.R. Parmenter (2008), poverty is significantly related to intellectual disability, and it is a factor that makes it extremely difficult to generalise the status of PWID in non-Western economies.

Meanwhile, it has been suggested that socio-cultural factors determine competence (T.R. Parmenter, 2008). In developing countries this may be more evident in collaborative, interpersonal problem-solving skills or activities and with morals like those documented among Nigerian students and Zambians labelled as intellectually disabled (Edeh & Hickson, 2002; Serpell, Mariga, & Harvey, 1993). As pointed out by Emerson, Fujifura, and Hatton (2007), infrastructures and services for persons with developmental disability are very few in developing countries, which forces people to depend on family and kinship for support. This lack of necessary support also limits their progress and/or improvement compared to that of PWID in the Western world, who have better access to infrastructure and support. The few available services are in a deplorable state and serve mainly as a means of getting rid of those that are judged to be ‘abnormal,’ unwanted and objects of charity in the society.

The current situation will remain until developing countries become committed to international legal instruments for the human rights of PWD. Many of them are that are signatories to such instruments are yet to ratify them and enforce such laws. With little or no political will, even

those that have ratified such laws are not making appreciable progress in realising their goals. Issues of disability have to be mainstreamed into all development programmes in developing countries. For these to be effective, there is a need for more research to be done so as to understand the concept of intellectual disability in the various developing countries (T.R. Parmenter, 2008). In addition, the development agencies have a role to play. Disability indicators have to be introduced into all development programmes so that countries have standards to work with, and for the purposes of monitoring and evaluation. T.R. Parmenter (2008) further points out the importance of reliable data on the extent of the population that needs special support in order to ensure that PWID are adequately covered by support programmes.

2.3.3 Classification of intellectual disability

Harris (2006) notes that early attempts to classify intellectual disability were based on recognition of multiple causes and different degrees of intellectual functioning. He also points out that with the increase in knowledge and the emergence of intelligence testing, mental age scores replaced earlier measures of estimating ability but did not specify adaptive behaviours. The realisation that the emergence of new cognitive abilities is accompanied by successive reorganisation of specific brain systems during development suggested that mental age is not on a continuum and does not develop linearly (Harris, 2006). Therefore, mental age scores were replaced by intelligence quotient (IQ) scores that are based on standard deviations from the means score (average range 90-100).

There are now four systems of classifying intellectual disability:

1. The International Classification of Diseases (ICD-10) (WHO, 1992)
2. The Diagnostic and Statistical Manual of Mental Disorders-Text Revision (DSM-IV-TR) (APA, 2000)
3. The AAIDD (Luckasson et al., 2002)
4. The ICF (WHO, 2001)

In addition, the WHO provides a guide for the use of ICD-10 with persons with intellectual disability (WHO, 1996). The Royal College of Psychiatry has also developed a supplemental Diagnostic Criteria for Psychiatric Disorders for use with adults with intellectual disability (Royal College of Psychiatrists, 2001). A manual on detailed application of DSM-IV-TR criteria to individuals with intellectual disability has also been prepared by the National Association for the Dually Diagnosed (NADD) in conjunction with the American Psychiatric Association (Harris, 2006).

The ICD-10 and DSM-IV-TR are classifications of diseases and mental disorders, respectively. Both adopt a multi-dimensional approach in their classification of intellectual disability, and are thus multi-axial. The AAIDD approach is different in that although it includes the measurement of intelligence, greater emphasis is placed on adaptive functioning and support systems. The ICF complements ICD-10 and adopts a similar approach to AAIDD, by focusing on how people live and the loss that occurs when those that have impairments are not provided with the necessary services to make them actively participate in society.

2.3.3.1 ICD-10 classification

The ICD-10, which is international in scope, defines intellectual disability (mental retardation) as follows (WHO, 1996):

Mental retardation is a condition of arrested or incomplete development of the mind, which is especially characterized by impairment of skills manifested during the developmental period, which contribute to the overall level of intelligence, i.e. cognitive, language, motor, and social abilities.

The definition also stresses that intelligence is not a unitary characteristic but is assessed on the basis of a large number of different, more or less specific skills. Although the general tendency is for all these skills to develop to a similar level in all individuals, large discrepancies are possible in PWID. Such people may show severe impairment in a particular area (e.g. language) or may

have a particular area of higher skill (e.g. in simple visuo-spatial tasks), as in severe intellectual disability.

Intellectual disability is classified mainly into mild (F70), moderate (F71), severe (F72), and profound (F73). There are also other (F78) and unspecified (F79) forms of intellectual disability (mental retardation). Problem behaviours can be recorded by using a decimal place code: none or minimal (x.0); significant, requiring attention or treatment (x.1); or other (x.8). This definition is part of the multi-axial system of ICD-10.

Persons with intellectual disability are prone to other mental disorders whose prevalence is at least three to four times greater than in the general population (WHO, 1996). Thus, the ICD-10 guide incorporates these, the severity of intellectual impairment and other conditions that do occur in intellectual disability in its multi-axial system of classification, as follows:

Axis I: Severity of retardation and problem behaviours

Axis II: Associated medical conditions

Axis III: Associated psychiatric disorders

Axis IV: Global assessment of psychosocial disability

Axis V: Associated abnormal psychosocial conditions

2.3.3.2 DSM-IV-TR classification

This presents the standard classification approach in the US, and defines mental retardation (intellectual disability) as a significant sub-average general intellectual functioning that is accompanied by significant limitations in adaptive functioning in at least two of the following skill areas: communication, self-care, home living, social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, and safety. The onset must occur before the age of 18 years.

Like ICD-10, the definition specifies that intellectual functioning is defined by the IQ obtained through assessment with one or more of the standardised, individually administered intelligence

tests. Significantly, a person with sub-average intellectual functioning is defined as having an IQ of approximately 70 or below (about two standard deviations below the mean). This must be accompanied by significant deficits in adaptive behaviour for intellectual disability to be diagnosed. Factors that may affect test performance, such as socio-cultural background, native language, and associated communicative, motor and sensory handicaps, must be considered when choosing testing instruments and in interpreting results.

Codes based on degrees of severity that are similar to those presented in ICD-10 are specified by DSM-IV-TR:

317	Mild mental retardation	IQ 50-55 to approximately 70
318.0	Moderate mental retardation	IQ 35-40 to 50-55
318.1	Severe mental retardation	IQ 20-25 to 35-40
318.2	Profound Mental Retardation	IQ below 20 or 25
319	Mental retardation, Severity Unspecified: when there is a strong presumption of mental retardation but the person's intelligence is untestable by standard tests	

The DSM-IV-TR uses a multi-axial system that accommodates the heterogeneity of persons with similar or the same diagnosis. By contributing to the evaluation of outcome risks, this system is of important value in evaluating long-term prognosis.

The axes are as follows:

Axis I: Clinical disorders

Other conditions that may be a focus of clinical attention

Axis II: Personality disorders

Mental retardation (intellectual disability)

Axis III: General medical conditions

Axis IV: Psychosocial and environmental problems

Axis V: Global assessment of functioning

2.3.3.3 Classification based on degree of severity

Intellectual disability is classified into five main degrees of severity by both DSM-IV-TR (APA, 2000) and ICD-10 (WHO, 1996). These are mild, moderate, severe, profound, and unspecified.

Mild intellectual disability: An IQ range of 50-69, using properly standardised intelligence tests, indicates mild intellectual disability (WHO, 1996). This is defined as an IQ of 50-55 to approximately 70 by DSM-IV-TR (APA, 2000). Formerly referred to as 'educable', this group constitutes about 85.0% of PWID. Most people functioning at this level acquire language, though with some delay, that is adequate for everyday conversations and clinical interviews. They have minimal impairment in sensorimotor areas and may not be distinguishable from other children until later in life. These individuals can achieve total independence in self-care, though may be slower than expected. During adult life, their level of dependence may be challenged by deficiencies in understanding and use of language. Those functioning at a higher level may cope better with work requiring practical rather than academic skills. They may achieve academic skills up to the sixth grade by their late teens. During adulthood, they usually achieve sufficient social and vocational skills to work or live independently or to be supervised in the community with minimal support. Conversely, they may need supervision or guidance when facing unusual social or economic stress.

According to WHO (1996), they have limited problems in a socio-cultural context as opposed to with academic achievements. However, signs of emotional and social immaturity can still be apparent in response to social responsibilities. Generally, persons with mild intellectual disability do not differ significantly from people of normal intelligence with regards to behavioural, emotional and social difficulties and treatment and support needs. Brain abnormalities are identifiable only in a minority of them. Associated conditions, including autism, other developmental disorders, epilepsy, conduct disorders or physical disability, may be present in varying proportions.

Moderate intellectual disability: The IQ range is 35-49 on ICD-10 and 35-40 to 50-55 on DSM-IV-TR. Previously referred to as 'trainable', this creates an inaccurate impression that they cannot benefit from educational programmes. They constitute about 10.0% of the intellectually

disabled population. This group is characterised by discrepancies in profiles of abilities. The levels of language and visuo-spatial development are variable. Development of comprehension and use of language is often slow, and never complete, in this category. Language usage varies from being able to take part in simple conversations to merely being able to communicate basic needs. Some may understand simple instructions and learn manual signs to compensate for their speech disabilities.

They may need lifelong supervision in the area of self-care and motor skills. They can benefit from learning vocational and social skills in a supervised community setting but are unlikely to go beyond second grade in terms of academic achievement. Moreover, they can learn to navigate familiar places independently. Relationships with peers may be hampered during adolescence due to their lack of social skills.

Brain abnormality is common in most moderately intellectually disabled persons. Autism, epilepsy, and neurological and physical disabilities are common, although most of them are mobile. There is the possibility of psychiatric conditions which are often difficult to diagnose due to limited communicative ability. The diagnosing professional may have to rely on information obtained from others who are familiar with the persons.

Severe intellectual disability: The IQ for this group is in the range of 20-34 on ICD-10 and 20-35 to 35-40 on DSM-IV-TR. They constitute 3.0-4.0% of PWID. Broadly speaking, severe intellectual disability is similar to moderate intellectual disability in the clinical picture, and both are characterised by the presence of brain abnormality and associated conditions. However, they function at the lower level of moderate intellectual disability. Most of them have significant limitation of motor skills use, indicating a major deficit in the development of the central nervous system.

They acquire little or no communication skills in childhood, and may only learn to talk during the school-age period. They can also be trained in elementary self-care skills. Basic survival skills, including sight-reading of essential words, may be learned according to their level of cognition. In adulthood, they may learn to perform simple tasks in closely supervised settings.

This group can also adapt well to life in the community, group homes or with their families if they do not require any special care.

Profound intellectual disability: Their IQ is under 20 on ICD-10 and below 20 or 25 on DSM-IV-TR. They constitute approximately 1.0-2.0% of people with intellectual disability. There are considerable impairments in sensorimotor functioning during early childhood. Affected individuals are grossly limited in their ability to understand or comply with requests or instructions. They are mostly immobile or severely restricted in mobility, incontinent, and capable of only very rudimentary forms of non-verbal communication. A highly structured environment with constant aid and supervision and an individualised relationship with a caregiver may lead to optimal development. The ability to care for their basic needs and motor skills may also improve if adequate training is provided. Some can perform simple tasks in closely supervised and sheltered settings.

Brain abnormality is associated with most cases. Associated conditions include severe neurological or other physical disabilities, epilepsy, and visual and hearing impairments. Pervasive and most severe forms of developmental disorders such as atypical autism are common in those who are mobile.

Unspecified intellectual disability: This is characterised by evidence of intellectual disability but lack of information for specific diagnosis. It is common in infants because they are too young for the available tests to yield IQ values. This may also occur when children or adolescents have associated impairments (e.g. deafness, blindness, muteness) or are uncooperative when being tested. Essentially, the younger the person, the more difficult it is to assess the presence of intellectual disability, except with profound impairment.

2.3.3.4 2002 AAIDD classification

The AAIDD defines mental retardation (intellectual disability) as ‘a disability characterised by significant limitations both in intellectual functioning and in adaptive behaviour as expressed in

conceptual, social, and practical adaptive skills. The disability originates before age 18' (Luckasson et al., 2002).

The definition adopts a multi-dimensional approach by covering both intellectual functioning and adaptive behaviour. Intellectual functioning is measured with an IQ test, and an IQ test result of 70-75 (approximately two standard deviations below the mean) indicates a limitation in intellectual functioning. Adaptive behaviour, which can also be measured with standardised tests, comprises three skill types:

- Conceptual skills: language and literacy; money, time and number concepts; and self-direction
- Social skills: interpersonal skills, social responsibility, self-esteem, gullibility, naiveté (i.e. wariness), social problem-solving, and the ability to follow rules/obey laws and to avoid being victimised
- Practical skills: activities of daily living (personal care), occupational skills, healthcare, travel/transportation, schedules/routines, safety, use of money, and use of the telephone

Furthermore, AAIDD stresses that the definition and assessment of intellectual disability must consider the community environment typical of the individual's peers and culture. Professionals must also take into account linguistic diversity and cultural differences that influence the way people communicate, move, and behave. Lastly, assessments must assume that limitations in individuals often coexist with strengths, and that a person's level of life functioning will improve if appropriate personalised support is provided over a sustained period.

The AAIDD multi-dimensional classification system is based on the following five dimensions (Luckasson et al., 2002):

Dimension I:	Intellectual abilities
Dimension II:	Adaptive behaviour (conceptual, social, and practical skills)
Dimension III:	Participation, interactions, and social roles
Dimension IV:	Health (physical health, mental health, and aetiology)
Dimension V:	Context (environments and culture)

In conclusion, the AAIDD definition suggests that the majority of affected individuals are expected to improve in their functioning whereas support is needed to maintain a basic level of function or, primarily, to slow potential regression. It also indicates that support planning should be focused on person-centred outcomes.

2.3.3.5 The ICF classification

The ICF belongs to the World Health Organization (WHO) family of classifications. The ICD-10, the most well known, gives aetiological classification based on diagnoses of diseases, disorders and other health conditions (WHO, 2001). In contrast, ICF classifies functioning and disability associated with health conditions (WHO, 2001). So, one can say that ICD-10 classifies diseases but ICF classifies health. Thus, both are complementary.

The ICF is supported by 191 countries as being the worldwide standard basis for describing health and disability. It presents the multi-dimensional basis of health measure for the health systems performance assessment of WHO. According to WHO (2001), this classification is based on the principles of:

- Universality: by focusing on everyone's functioning, thereby limiting the potential for labelling PWD as a different group
- Parity: by not making a distinction between different health conditions (i.e. as 'mental' and 'physical') that affect the structure of content of a classification of functioning and disability
- Neutrality: by ensuring that domain names are worded in neutral language, the classification therefore expresses both positive and negative aspects of each aspect of functioning and disability
- Environmental factors: by emphasising the role of environmental factors in the scientific understanding of 'functioning and disability', thus making way for interventions

The classification focuses on physical and mental functioning, activities and participation (e.g. mental functions, sensory functions, communication, mobility self-care, domestic life,

interpersonal interactions and relationships, and community, social and civic life) and environmental factors (e.g. attitudes, support and relationships, services, systems and policies). It can be applied to service provision at the individual (e.g. evaluation of interventions), institutional (e.g. educational and training purposes) and social (e.g. social policy development) levels.

The overall goal of ICF is to highlight the dimensions involved in how a person lives with a health condition and how these can be improved in order to lead to a healthy life. The ICF classification lists mental retardation (intellectual disability) (b117) under intellectual functions that include ‘general mental functions required to understand and constructively integrate the various mental functions, including all cognitive functions and their development over the life span’.

2.3.4 Epidemiology of intellectual disability

Last (1995) defines epidemiology as ‘the study of the distribution and determinants of health-related states or events in specified populations and the application of the study to the control of health problems.’ Harris (2006) confirms that epidemiology has a wider application beyond the traditional case finding and describing of the demography of a disorder, and therefore calls for future research to explore these other uses in the field of intellectual disability. He points out the importance of combining epidemiologic approaches with neurobiologic and psychosocial measures because epidemiology also studies the nature and scope of intellectual disability and its associated medical, behavioural, emotional, and psychiatric conditions. He further discloses that epidemiologic studies are capable of revealing individual developmental trajectories and the related risky, protective and resilient influences that shape those trajectories. Finally, he highlights the role of experimental epidemiologic approaches in the study of causes and factors that influence the course of the disorder and service needs.

Understanding the prevalence of intellectual disability is essential for planning and assessing interventions (Harris, 2006). Conversely, these estimates often vary widely due to the

heterogeneity of the condition as well as methods of case identification (Harris, 2006; Leonard & Wen, 2002). Harris (2006) asserts that despite the wide variations in the reported prevalence of intellectual disabilities in various countries, they all point towards the fact that the prevalence is less than 1.0% in any population. However, an estimated prevalence of 3.0% has been adopted based on a statistical approach and an IQ of below 70. According to Leonard and Wen (2002), the large differences in prevalence estimates may partially be linked to lack of consensus on the criteria for defining intellectual disability and methods of case finding, which have great implications for epidemiological research. Researchers are of the opinion that apart from the general population prevalence of intellectual disability, it is critical to also know the prevalence of specific intellectual disabilities based on their causes (Harris, 2006; Holtzman, 2003). In addition, Harris (2006) advises that population studies should be aware of the various terms that have been used to describe intellectual disability and published studies should criticise the definitions used in case finding.

Basically, at least three approaches of defining intellectual disability have been identified in research: statistical models; pathological models; and social systems models (Harris, 2006). He asserts that the statistical model which uses psychometric tests and the pathological model that places emphasis on adaptive skills offer pragmatic definitions, and combining the two generates the currently acceptable definition of intellectual disability for research purposes. This approach presents a broader and more meaningful picture of intellectual disability in the population (Leonard & Wen, 2002).

However, the existence of criticisms of the assumptions and variations within each of these models presents other challenges. The statistical model, by using an IQ score two standard deviations below the mean, assumes a normal distribution and hence a continuum of cognitive abilities (Harris, 2006; Leonard & Wen, 2002). In contrast, variations in cognitive profile and associated conditions complicate assessment and categorisation (Harris, 2006). Furthermore, the AAMR (AAIDD) measure of sub-average intellectual functioning IQ score of approximately 70-75 or below has come under criticism. MacMillan, Gresham, and Siperstein (1995) argue that AAMR's (AAIDD) definition is too imprecise to be useful in research and should rather be

reserved for advocacy purposes because it is capable of adding 2.8% of the population with IQs between 71 and 75 to the population of intellectually disabled.

Some studies prefer to use only a statistical model, partly due to a lack of totally objective or standardised adaptive behaviour measures in different socio-economic and cultural environments (Leonard & Wen, 2002). Although this may be justifiable, Leonard & Wen (2002) report the authors' acknowledgement that there is a high probability of including individuals who otherwise would not have been classified as having intellectual disability because of an absence of deficiency in adaptive skills.

The social system model is most commonly used by schools to label children as intellectually disabled at school entry (Harris, 2006). Harris (2006) further points out that such children (especially those in the mild category), however, may not fit into the classification before and after school if they can function adequately and have sufficient physical and social skills to live and work independently in society. Another methodological factor that may influence prevalence is ascertaining methods. According to Leonard and Wen (2002), 'cases should be ascertained from the entire populations and not limited to individuals receiving selected specialty services (e.g. hospital-based services) or living in institutions'.

Furthermore, Harris (2006), in what seems like an insight from the developed world, suggests other factors that may affect the prevalence of intellectual disability. He mentions programmes such as normalisation, mainstreaming and improved interventions for previously disadvantaged individuals. In addition, he acknowledges the positive impact of poverty reduction, improved nutrition, early intervention and advancement in medical diagnoses on the prevalence of intellectual disability. Similarly, greater availability of genetic counselling, prenatal diagnosis, abortion services for high-risk pregnancies, postnatal dietary/hormonal treatments for inborn errors and improved obstetrical techniques are also mentioned. An increase in the life span of affected persons through improved quality of life has also affected prevalence. Nevertheless, improvements in care for premature infants are identified as a cause of intellectual impairment in low birth weight infants who survive.

A number of demographic factors have also been identified as affecting prevalence. These include age, gender, socio-economic level, and race (Leonard & Wen, 2002). Harris (2006) and Leonard & Wen (2002) affirm that age-specific rates of intellectual disability differ in a population. To support this observation, Harris (2006) relates that ‘most surveys show an increase in prevalence from the preschool years (0 to 4) to middle childhood (5 to 12)’. In contrast, Leonard and Wen (2002) argue that this may not necessarily mean that there are actual variations in prevalence in a population but rather, a reflection of differences in case identification. Most children with severe intellectual disability may have been identified prior to school (Harris, 2006), whereas those functioning in the mild category may only be recognised at that time (Harris, 2006; Leonard & Wen, 2002). Increase in cognitive demands made by the school system and adaptive difficulties related to social judgment and behaviour control may increase the prevalence during the teen years (Harris, 2006). It is also possible for population prevalence of mild intellectual impairment in young adulthood to drop because they have been able to adapt to the demands of the society with time (Harris, 2006; Leonard & Wen, 2002). Finally, it has been postulated that the decrease in prevalence seen in older persons is as a result of the shorter life span of persons with intellectual disability, as well as reduced demands on them from vocational programmes (Harris, 2006; Leonard & Wen, 2002).

Commenting on the reports of higher prevalence of intellectual disability among males than females, Harris (2006) links this to higher prevalence of congenital abnormalities, premature birth, neonatal death, stillbirth, and X-linked disorders in males. Also, he notes that aggressive behaviour in boys is likely to draw the attention of authorities, thus leading to more frequent diagnosis than in girls. Conversely, other studies did not confirm this, especially when age and the severity of intellectual disability were considered (Harris, 2006; Leonard & Wen, 2002).

In addition, socio-economic level is a critical factor in mild intellectual disability due to differences in sensory and psychosocial factors like poor living conditions, overcrowding, and lack of educational opportunities (Harris, 2006; Leonard & Wen, 2002). Both studies also claim that the observed higher prevalence of mild intellectual disability among some racial minorities is linked to socio-economic level and not to race. Therefore, Leonard and Wen (2002) emphasise the importance of methodological issues and potential confounders, including case definitions,

study designs, demographic composition of the study population, maternal factors, early intervention efforts and other socio-economic and cultural factors, in assessing how racial differences may affect prevalence.

2.3.5 Aetiology of intellectual disability

There are various causes of intellectual disability. To Harris (2006), ‘this reflects a complex interaction involving genetic disposition, environmental insults, developmental vulnerability, heredity, and environment’. He also stresses that genetic predisposition must consider individual susceptibilities to the influence of environmental agents. Exposure to environmental toxins during the period of cell replication or expression could result in genetic damage. He further asserts that over 750 genetic disorders, about 25.0% of which exert their primary effects on the brain and lead to secondary effects on the central nervous system, are associated with intellectual disability.

Causes of intellectual disability are often classified based on the timing of when the damage to the brain occurs (Harris, 2006). Thus, AAMR (AAIDD) classified the condition as follows (Luckasson et al., 2002):

1. Prenatal causes

Genetic disorders

- a. Chromosomal disorders: autosomes, X chromosome disorders, uniparental dysomy
- b. Syndrome disorders: neurocutaneous, muscular, ocular, craniofacial and skeletal disorders
- c. Inborn errors of metabolism: amino-acid, carbohydrate, mucopolysaccharide, mucolipid, urea cycle, nucleic acid, copper metabolism, mitochondrial and peroxisomal disorders

- d. Developmental disorders of brain formation : neural tube closure, brain formation, cellular migration, intraneuronal, acquired brain defects and primary (idiopathic) microcephaly

Environmental influences

- a. Intrauterine malnutrition: maternal malnutrition and placental insufficiency
- b. Drugs, toxins, and teratogens: thalidomide, phenytoin, alcohol, cocaine, and methylmercury
- c. Maternal diseases: varicella, diabetes mellitus, hypothyroidism, and maternal phenylketonuria
- d. Irradiation during pregnancy

2. Perinatal causes

- a. Intrauterine disorders: acute and chronic placental insufficiencies, abnormal labour and delivery, obstetrical trauma, and multiple gestation
- b. Neonatal disorders: hypoxic-ischaemic encephalopathy, intracranial haemorrhage, posthaemorrhagic hydrocephalus, periventricular leukomalacia, neonatal seizures, respiratory disorders, infections, head trauma at birth, metabolic disorders, and nutritional disorders

3. Postnatal causes

- a. Head injuries: cerebral concussion, cerebral contusion/laceration, intracranial haemorrhage, subarachnoid
- b. Infections: encephalitis, meningitis, parasitic infestations, and slow or persistent viral infections
- c. Demyelinating disorders: postinfectious and post immunisation disorders
- d. Degenerative disorders: syndromic disorders, poliodystrophies, basal ganglia disorders, leukodystrophies, sphingolipid disorders and lipid disorders
- e. Seizure disorders: infantile spasms, myoclonic epilepsy, Lennox-Gastaut syndrome, progressive focal epilepsy and status epilepticus-induced brain injury
- f. Toxic-metabolic disorders: Reye syndrome, intoxications and metabolic disorders
- g. Malnutrition: protein-calorie (kwashiorkor and marasmus)

- h. Environmental deprivation: psychosocial disadvantage, child abuse and neglect, chronic social/sensory deprivation
- i. Hypoconnection syndrome

2.3.6 Health issues and quality of life of people with intellectual disability

The health of PWID is receiving more attention in the developed world. Though intellectual disability is not a disease itself, van Schrojenstein Lantman-de Valk (2005) argues that the underlying brain dysfunction that limits intellectual functioning also gives rise to other central nervous system dysfunctions like neurological, psychiatric or sensory problems and motor disorders in affected individuals. Thus, it is associated with double the health problems observed in other people (van Schrojenstein Lantman-de Valk et al., 2000). Moreover, health problems correlate with the level of intellectual disability (Harris, 2006).

2.3.6.1 Life expectancy

The life expectancy of the general population is increasing. Although the life expectancy of PWID is lower than that of the general population, there is evidence of a trend that it is increasing in a parallel fashion with that of the general population (Harris, 2006; Ouellette-Kuntz, 2005). As life expectancy increases, there is the tendency for a corresponding increase in health problems in older PWID (Stanley, 1998). Increased mortality is associated with a severe level of intellectual disability and race (Ouellette-Kuntz, 2005).

2.3.6.2 Physical and mental well-being

Intellectual disability is associated with other disabilities: visual impairment, hearing loss, speech and language problems, seizure disorders, and cerebral palsy (Harris, 2006). He asserts that the rates of visual disability and hearing impairment, depending on the level of intellectual disability, are, respectively, 15 and 3-4 times greater than in the general population. van Schrojenstein

Lantman-de Valk (2005) points out the risk of under-recognition of these sensory impairments in the assessment of persons with intellectual disability. This can diminish the options for full development of the individual and can lead to underestimation of their intellectual capacities.

Speech and communication disorders are commonly found among PWID and are worse in those that are severely affected. This could triple the prevalence of communication disability in the general population. In addition, mobility problems associated with cerebral palsy and lower joint contractures have been documented, and could be 14 times more frequent than in unaffected individuals (Harris, 2006; van Schrojenstein Lantman-de Valk et al., 2000).

Epilepsy is also common in this group. It occurs 15-30 times more than in the general population, and carries the risk of sudden unexpected death, fractures, accidents, trauma, medication interactions and side-effects (van Schrojenstein Lantman-de Valk, 2005; van Schrojenstein Lantman-de Valk et al., 2000).

Intellectual disability resulting from genetic disorders is related to certain health problems, as described by van Schrojenstein Lantman-de Valk (2005). For example, people with Down's syndrome are at increased risk for congenital heart anomalies, pyloric stenosis, and hypotonia as neonates. Also, they commonly experience visual and hearing impairments, hypothyroidism, respiratory infections, leukaemia, dental problems and an early onset of Alzheimer's-related dementia. Those with fragile X syndrome (FXS) experience problems in motor coordination, are more prone to speaking disorders, autistic characteristics and attention deficit disorders. Furthermore, Prader Willi syndrome manifests in hypotonia, obsessive eating disorders and obesity, which may lead to early onset of diabetes. Sexual development and menarche are delayed; daytime sleepiness is common; and psychoses are seen in adolescents and adults.

Furthermore, higher rates of psychopathology have been identified among individuals with intellectual disability than in the general population (Harris, 2006; Stanley, 1998). However, according to Harris (2006), the rates vary greatly according to specific assessment procedures, diagnostic criteria, and the degree of severity of intellectual disability but may be four or five times greater than in the general population. The kinds of psychopathology often seen in this group include attention deficit/hyperactivity, anxiety, mood conduct and oppositional defiant

disorders (Harris, 2006). Psychopathology in intellectually disabled people has been implicated in loss of community residential placements (Bruininks, Hill, & Morreau, 1988; Fotheringham, 1999), unemployment (D.J. Anderson, Lakin, Hill, & Chen, 1992) and restrictions related to participation in recreational and educational activities (T. Parmenter, Einfeld, & Tonge, 1998).

2.3.6.3 Physical activity

Lack of physical activity poses a threat to the health of PWID. Physical inactivity, which is more prevalent in these individuals, is a risk factor for chronic diseases like coronary heart disease (Messent, Cooke, & Long, 2000), obesity and diabetes (Stanish, Temple, & Frey, 2006). According to WHO (2004a), physical activity reduces blood pressure, sugar and lipids, as well as the risk for colon cancer and breast cancer in women. It therefore recommends 'at least 30 minutes of regular, moderate-intensity physical activity on most days' to reduce the health risks outlined above but notes that more activity may be required for weight control.

In the developed world, environmental, physical and psychosocial factors influence physical activity among these people (Stanish et al., 2006). Physical activity decreases with age, as seen in the general population, and time, money and weather are other barriers perceived to influence regular participation in physical activity. External barriers imposed by the prevailing support system, in the form of overprotection, may often lead to lack of opportunities to exercise. Messent et al. (2000) reported 'disproportionately high levels of obesity and low levels of cardiorespiratory fitness in comparison with the general population' among their study participants. The same study revealed that 92.0% of the participants fell below the recognised minimum levels of physical activity necessary to maintain a healthy life.

In people that also have mobility impairments, this may pose another challenge, particularly in developing countries where there is no infrastructure (e.g. transport, equipment) to accommodate the needs of PWD. Other factors may include discrimination and negative attitudes towards PWID, which may prevent them from getting involved in social activities that provide them with opportunities for physical activity.

Finally, to attain the WHO global goal for physical activity, PWID must not only be targeted by campaigns and large-scale programmes that promote physical activity, policies must also be put in place to facilitate their participation in such programmes. To realise this global goal, research in this area must include individuals with intellectual disability in different geographical locations so as to investigate the barriers to physical activity, the kinds of activities that are appropriate (physically and culturally) for them and strategies to adopt in order to make provisions for their participation.

2.3.6.4 Other health-promoting activities

People with intellectual disability seldom take part in other health-promoting activities such as ensuring oral hygiene, screening for diseases and immunisation. Studies document general poor oral health in individuals with intellectual impairment (Glassman & Miller, 2003; Minnes, Nachshen, & Woodford, 2003), but a Swedish study reported satisfactory oral hygiene among its participants (Gabre, Martinsson, & Gahnberg, 2001), indicating hope for improvement if efforts are properly channelled. Moreover, a New Zealand study (O.J. Webb & Rogers, 1999) revealed that intellectually disabled persons neglected common health-promoting activities such as undergoing regular check-ups for existing conditions, being referred to an optician, being screened for preventable diseases, and managing their weight.

Use of alcohol, illicit drugs, and cigarette smoking were reported among adolescents with intellectual disability in a review by McGillicuddy (2006). He indicated that though this was lower than in the general population, it is significant in that common characteristics associated with PWD, such as short attention spans, distortion of abstract cognitive concepts and overly compliant dispositions, may increase the likelihood of substance abuse-related problems. Those on prescription medications may also experience interactions between their medications and alcohol.

2.3.6.5 Access to and utilisation of healthcare services

With the tendency to face more health problems than the non-disabled, persons with intellectual impairment undoubtedly need good access to healthcare services. However, basic healthcare services are often beyond their reach. van Schroyen Lantman-de Valk (2005) and Stanley (1998) note that health workers lack adequate training and skills to address the special needs of this group. The training of these gatekeepers does not include medical issues related to intellectual disability, despite the barrage of associated medical conditions that this group of people experience.

In addition, communication and speech disorder is common, as demonstrated in a study by Stanley (1998) wherein general practitioners (GPs) could not use alternative communication methods, making it difficult to adequately attend to the needs of their clients with intellectual disability. The same study reported that GPs, in addition to lacking confidence in delivering their services, felt that the lead responsibility for dealing with the general health needs of people with intellectual disability did not belong with them. This actual and perceived lack of competence has a negative implication for the good health of PWID.

The client's refusal to cooperate, self-assessment that the sickness is not serious, proximity to a hospital, time constraints, accessibility, and transportation may also present obstacles to intellectually impaired individuals seeking required healthcare (Lin, Wu, & Lee, 2003, 2004). In addition, Shrestha and Weber (2002) point out that in countries where the care of PWID is largely the family's responsibility, access to healthcare services is largely influenced by family attitudes towards intellectual disability and services.

Culture greatly impacts on PWID's use of healthcare (Krahn, Hammond, & Turner, 2006). Whether a person will use a particular kind of health service and the extent of such use is partly dependent on the culture s/he belongs to. Although not explicitly stated by the authors, one should not overlook the impact of negative attitudes towards intellectual disability in some cultures and how such attitudes determine the level of healthcare use, especially when the individual is under the care of the family. Furthermore, the authors state that health workers' negative attitudes towards clients with intellectual disability can be influenced by gender, type of

selection (self or imposed) into the helping profession, training and lack of interest in intellectual disability.

2.3.6.6 Sexual health

To be sexual is to be human, regardless of disability. Moreover, there are many ways of exploring one's sexuality. Contrary to popular beliefs, sexuality goes beyond just sexual intercourse. It is the totality of 'basic human needs of being liked and accepted, displaying and receiving affection, feeling valued and attractive, and sharing thoughts and feelings' (Murphy & Elias, 2006). The WHO (1975) defines sexuality as 'a central aspect of being human throughout life and encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction.' It has biological, medical, social, psychological, spiritual, cultural, and legal aspects, which vary according to where, when and how one lives; who is raising you; and what is personally important to you (WHO, 1975).

Sexuality and disability studies are relatively sparse because, historically, Western culture viewed PWD as asexual or potentially deviant (Di Giulio, 2003). According to P. Anderson and Kitchin (2000), some of the myths surrounding asexuality of PWD are still with us today, and are anchored on cultural ideologies that legitimise the lifestyles, practices, minds and bodies of non-disabled as the 'norm' and those of disabled people as deviant and undesirable. Thus, PWD are culturally represented as asexual, uninterested in sex or unable to take part in sexual activity, or as sexual 'monsters', unable to control their sexual drives and feelings. This may explain the unusual silence around sexuality and disability by both disabled and non-disabled, including health workers, which in turn culminates in poor sexual health for PWD. These myths have not only reinforced negative attitudes of the non-disabled towards the sexuality of disabled persons, but have also been internalised by PWD themselves, making them 'resigned to fate' as far as sexuality is concerned (P. Anderson & Kitchin, 2000). This internalisation is also capable of causing PWD to reject their peers for intimate relationships, especially when they perceive themselves as being 'better' (Nunkoosing & John, 1997).

The picture is worse for PWID, whose expression of sexuality is often criticised. Di Giulio (2003) affirms that society often forgets or denies the need for love, affection, and fulfilling relationships by this group of individuals. Consequently, they are denied the opportunities to learn about and explore their sexuality. They lack information about socially acceptable expression of sexuality, effective sexual communication methods, and are often misinformed about sexuality to discourage their participation (Di Giulio, 2003; Hingsburger & Tough, 2002). In addition, they lack access to private places to masturbate or engage in sexual intercourse (Hingsburger & Tough, 2002). Di Giulio (2003) suggests that the disapproval of certain sexual behaviours in persons with intellectual impairment can be linked to the notion that these persons are incapable of responsible intimate/sexual relationships. This disapproval is also a modern day reflection of the historical perspectives about the sexuality of PWID described earlier, notably when they were being sterilised so as to protect the general population from contracting diseases from them and to cut down the ‘production of more intellectually disabled persons’.

Nonetheless, Hingsburger and Tough (2002) argue that inappropriate expression of sexuality by PWID is not a reflection of a lack of capacity for responsible sexual relationships but rather the result of their placement in environments that discourage appropriate expressions of sexuality. If they are allowed to have privacy, they can learn to express sexuality in socially acceptable ways. However, if they continue to be denied privacy, this does not mean that there will be a reduction in the rate of their sexual activity (Hingsburger, 1990). They will continue to have sex anyway.

Furthermore, Hingsburger (1990) explains ‘the inappropriate sexual behaviour model’ as that which reduces the sexuality of these people to mere sex acts and biological urges, with no dimension of emotional intimacy, caring and love included. Biological drive is recognised as the only motivation for sexual behaviour. Of course, this is not the reality. He asserts that these individuals are capable of showing love and affection and look forward to being loved and accepted. However, they are on the receiving end of hostility (and sometimes pity) from non-disabled society members, who perceive them as ‘disabled’ and ‘worthless’. Therefore, they may develop a negative self-image (Hingsburger, 1990) as a result of becoming aware of the stigma attached to their disability by society (Beart, Hardy, & Buchan, 2005).

In spite of this, PWID do experience intimacy and love among themselves. Friendship with peers has been documented to be characterised by mutuality/reciprocity and acceptance among this group (Nunkoosing & John, 1997). However, the principle of normalisation expects PWD to relate with 'others' (non-disabled) rather than their peers. Although this is a good initiative, research has shown that non-disabled tend to reject PWID for intimate relationships (Nunkoosing & John, 1997). Marginalisation and isolation due to structural, architectural, political, and transport issues also make that almost unrealisable. However, strict adherence to normalisation could rob this group of relationship opportunities with both non-disabled people and their peers, thereby making them more lonely and frustrated.

Empirical studies have thrown more light on the sexuality knowledge of PWID. A study by McCabe (1999) reveals that PWID experienced lower levels of sexual knowledge and experience, more negative attitudes to sex and stronger sexual needs than people with physical disability and the non-disabled. Conversely, a more recent study (Leutar & Mihoković, 2007) documents low knowledge of sexually transmitted infections and safe sex but a relatively good level of knowledge in the differences between appropriate and inappropriate sexual behaviours and social understanding of certain situational norms. The participants were drawn from a social club and, although not documented in the study, it is possible that they were exposed to training to build up their socio-sexual skills prior to the study. However, this finding demonstrates that it is possible for this group of individuals to master socio-sexual skills.

Moreover, findings of studies that assessed attitudes of various groups, including caregivers, towards the sexuality of PWID vary. Scotti, Slack, Bowman, and Morris (1996) report that college students viewed expressions of sexuality by intellectually impaired people as less acceptable than those by non-disabled persons. Likewise, findings by Swango-Wilson (2008a) indicate that caregivers were uncertain about the appropriateness of sexual behaviours of PWID, although the younger caregivers demonstrated better acceptance of sexual behaviours of PWID. In addition, caregivers perceived their own sexual behaviours and those of their peers as being more appropriate than those of PWID. In her second study, she found that lower acceptance of sexual behaviours of individuals with intellectual disability was not related to a lower perception

of the ability of the caregivers to impart sexuality education, in contrast to the Theory of Planned Action (Swango-Wilson, 2008b).

In another study, discrepancies of acceptable socio-sexual behaviours across the community with respect to adults with and without intellectual disability were found only in regards to marriage and childcare, with older members of the community being more conservative than younger members and paraprofessionals (M.N. Oliver, Anthony, Leimkuhl, & Skillman, 2002). All, including staff, generally supported the sexuality of PWID. However, PWID in this study had lower acceptance rates for themselves than community members had for them with respect to holding hands, kissing, heterosexual petting, sex while dating, engaging in masturbation and using birth control, which may be a reflection of how authorities discouraged such behaviours in the past. Similarly, the results of a study by Bazzo, Nota, Soresi, Ferrari, and Minnes (2007) suggest that moderately liberal attitudes of social service providers exist toward the sexuality of PWID. Staff involved in outpatient treatment service showed the most liberal and positive attitudes.

Some of the findings point towards the acceptance of the sexuality of individuals with intellectual disability, but, as noted by Di Giulio (2003) and Milligan and Neufeldt (2001), liberal attitudes do not always translate into practice. An example is the report by Christian, Stinson, and Dotson (2001), which highlights that the majority of staff at a centre for persons with developmental disability were willing to support the sexuality of their residents; however, few were trained to do so. The issue of training such staff in the sexuality of their clients is therefore of utmost importance in order to realise the sexual health and rights of PWID.

2.3.6.7 Barriers to sexual health

Sexual health is attainable for PWID, provided the common obstacles in their way are adequately addressed. Paying attention to barriers such as increased vulnerability to HIV/AIDS, sexual exploitation and abuse, inaccessible healthcare services, lack of access to sexuality education,

lack of privacy, and decreased access to sexual partners is critical to ensuring the sexual health of this group.

People with intellectual disability are vulnerable to HIV infection due to poverty, illiteracy and social exclusion. These factors, which are common to both disability and HIV/AIDS, put them at high risk of the latter (Groce, 2004b). The cognitive nature of their disability also makes it difficult for them to have opportunities to practise safe sex, especially if the individual is with an exploitative partner (Di Giulio, 2003).

Because they want to be accepted by their partners, coupled with the myth that they should be grateful to have sexual partners, women with intellectual disability are more likely to engage in risky sex. Serial partnering has also been documented among women with disability and they have a higher risk of being raped than non-disabled women, which also increases the rate of contracting sexually transmitted infections (STIs), including HIV (Groce & Trasi, 2004; Mulindwa, 2003). Due to the nature of their disability, they are often not believed when they report incidences of rape (Groce & Trasi, 2004).

Moreover, their higher vulnerability to STIs and HIV warrants sexuality and HIV prevention education in a format that is accessible to them. However, large HIV education campaigns and interventions hardly target this group. According to Di Giulio (2003), PWD seldom receive sexuality information before they engage in sexual activities. McCabe (1999) reveals that about 50.0% of PWD in her study had not received any form of sexuality education. The participants with disability in the study also reported fewer sources of sexuality education than their non-disabled peers. The non-disabled participants received information from parents, friends and other sources, but those with disability accessed such information through other sources, such as the media. This demonstrates that there is little discussion about sexuality with family members and limited opportunity to confirm the accuracy of the information. Edwards and Elkins (1988) confirm this, stating that 'parents and professionals working with PWID continue to view them childlike, and therefore avoid talking about sexuality'. Not only do they deny the existence of sexuality in their wards with intellectual disability, they also view it as a source of risk and fail to acknowledge that it is also a healthy part of human development (Lumley & Scotti, 2001).

Inaccessible healthcare services translate into inadequate sexual health services for these individuals. It has been documented that women with physical disability (which may co-occur with intellectual disability) are less likely to have access to family planning services (P. Anderson & Kitchin, 2000). In addition, as discussed earlier, communication problems have been identified as an obstacle that often prevents individuals with intellectual impairment from utilising healthcare services. Moreover, Di Giulio (2003) points out that women with intellectual disability may be afraid of examination equipment or procedures, thus not cooperate with health professionals. She further stresses that parents' or caregivers' belief that they cannot have sex may preclude them from seeking sexuality and HIV-related services. Therefore, access to comprehensive sexual health information is important for this group.

Social exclusion and marginalisation make it difficult for PWD to socialise and have opportunities for dating and sexual activities (Di Giulio, 2003). Most young people with intellectual disability are not allowed to socialise due to parental or institutional overprotection (Edwards & Elkins, 1988). In addition, youth and adults with intellectual disability may also be actively discouraged by authorities from establishing relationships (Di Giulio, 2003). In summary, Shakespeare (2000) states that 'the problem of disabled sexuality is not how to do it, but who to do it with'.

Finally, in Lesseliers and Van Hove's study (2002), persons with intellectual impairment were given the opportunity to voice their range of desires, knowledge, and experience regarding sexuality and intimate relationships. Like any other human beings, they shared various relational-sexual experiences: some were in love, while some were not; some wanted a partner, while some did not; some had experienced pleasure in sexual relationships, while some had experienced abuse and pain; some wanted to get married and have children, while others did not wish to. However, unlike the non-disabled participants, most struggled with lack of support when it came to building relationships and in coping with ensuing relational difficulties. The authors concluded that 'the circumstances of people's lives, including many structural, organisational, and attitudinal barriers, appeared to shape the participants' perception of sexuality and their relationships with others.'

2.3.7 Intellectual disability in Africa

Recently, attention has been drawn to the paucity of studies in intellectual disability in the developing world, particularly Africa. Most knowledge in the field of intellectual disability is from studies conducted in the developed world (Durkin, 2002; Emerson et al., 2007; Fujifura et al., 2005; Njenga, 2009). Durkin (2002) posits that the reasons for this are: ‘(1) the difficulty of data collection in settings where few children with disability are formally identified and receiving services; and (2) a tendency among researchers and health providers to view childhood disability as a low priority in populations where infant and child mortality rates are still in great excess.’ Among the little knowledge about intellectual disability in developing countries, sub-Saharan Africa is grossly under-represented (Njenga, 2009). He argues that the plight of Africa is lack of resources to put up a response that is commensurate with the challenge, and not that of according it a low priority, as suggested by Durkin (2002). In addition, he states that this presents a great collaborative opportunity for researchers in this field in the developed world to come to the aid of the neglected Africans with intellectual disability.

Although the prevalence of intellectual disability varies in the developed world, the pattern is more consistent than in developing countries, where the prevalence data are not only very high but are also less consistent, for instance, ranging from 5/1000 in India to 20/1000 in Bangladesh (Fujifura et al., 2005). South Africa is the only African country included in the study and has a prevalence of 6/1000. The authors suggest that this must be due to variations in definition and case identification methodology, as well as differences in exposure to risk factors across population groups. Durkin (2002) outlines risk factors and causes of intellectual disability in low-income countries as including genetic factors, nutritional deficiencies, infections, perinatal and neonatal factors, environmental toxins, poverty and trauma.

Review of existing literature on intellectual disability in Africa was conducted with the search string: *intellectual disabilit* OR mental retardation OR developmental disabilit* OR Down syndrome AND Africa*. The search was undertaken on the UKZN Federated search using 12 search engines: AIM, AJOL, Science Direct, ERIC, Psychinfo, Google Scholar, Highwire Press, CINAHL, Pubmed, popline, NEXUS and JSTOR. Google search (general) was used to obtain a few other published items and other references in a few of the journal articles were searched for

on Google as well. All years were searched and the search terms were not enclosed in apostrophes in order to capture studies that did not focus on intellectual disability directly but are related to the topic.

Overall, 39 published items that were relevant to the study were extracted. They covered a wide focus area, including diagnosis, treatment, co-morbidity, prevalence, attitudes, conceptualisation, service utilisation, sexual abuse and Down's syndrome. Articles that focused indirectly on intellectual disability, such as congenital malformations, infections, preterm and low birth weight, were also included in the review because they give an idea of the risk factors for intellectual disability. About two thirds (66.7%) of the studies focused primarily on children, while others (15.6%) focused on groups that were inclusive of children. More than half (51.3%) of the studies were undertaken in Nigeria and a quarter (25.6%) in South Africa (Figure 2.3). The studies cut across nine African countries and one focused on Africa generally. Most (71.7%) of the research was concentrated between 2006 and 2009 (Figure 2.4).

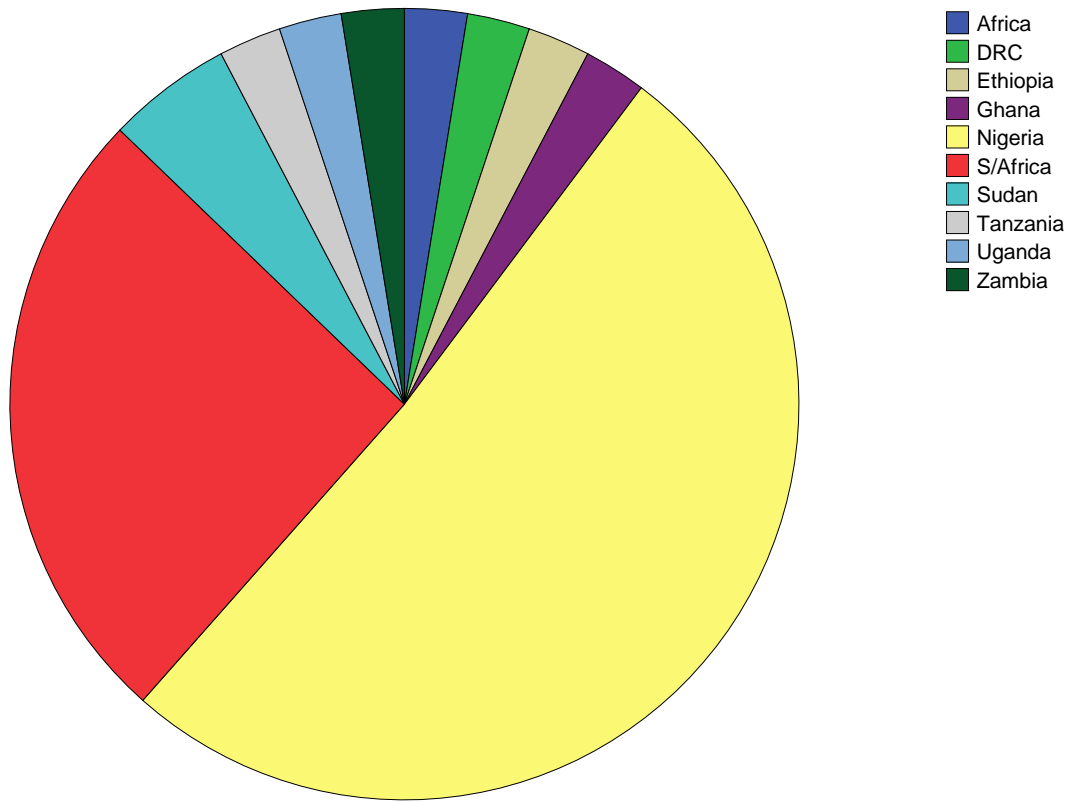


Figure 2.3: Geographical distributions of studies

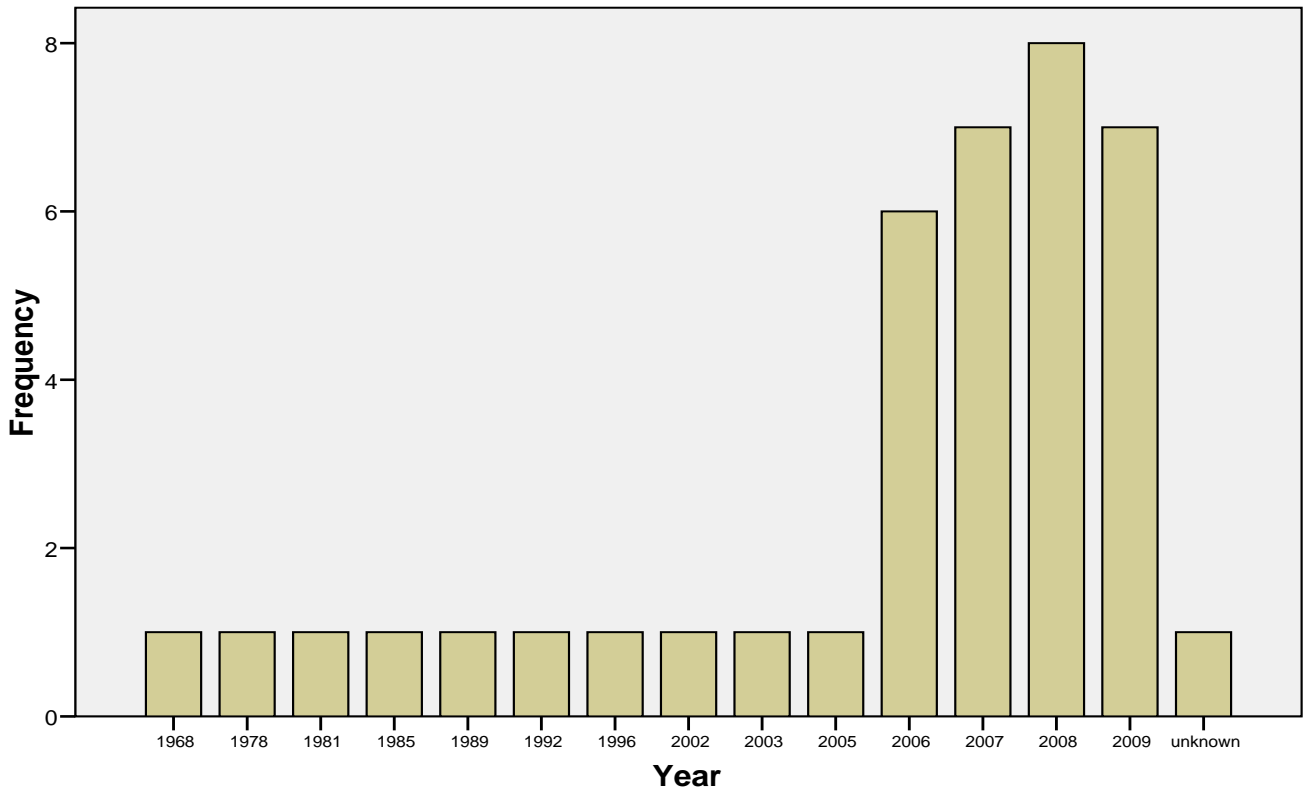


Figure 2.4: Distribution of studies by year

Studies on the nature and type of childhood disability in Africa are scarce. Only one of the reviewed articles described the nature and causes of intellectual disability in South Africa (Kromberg et al., 2008). Intellectual disability was the most common disability (3.6%) reported of the five disabilities covered in the study. The ratio of mild to severe intellectual disability was found to be 4.5:1, with males more affected than females (3:2). The aetiology was established in 27.0% of the cases and 21.0% were linked to a congenital disorder such as Down’s syndrome, spina bifida, and tuberous sclerosis in 5, 2, and 2 cases, respectively. Malnutrition or psychosocial deprivation caused 6.0% of the cases in the study to be deemed acquired cases of intellectual disability. Epilepsy was the most common (15.5%) associated disorder followed by cerebral palsy (8.4%), auditory disability (7.1%), microcephaly (4.6%), or hydrocephaly (1.7%).

Traditional healers in the rural community under study were treating intellectual disability based on the belief that spiritual causes were behind it, like breaking taboos and witchcraft. Although most of them admitted to not knowing the cause, a few attributed it to heredity and pregnancy problems. However, 75.0% of those with moderate to severe intellectual disability and epilepsy were on anti-epileptic medications. The majority of those who patronise traditional healers are mild cases. It may be advisable for traditional healers to be integrated into orthodox medicine to safeguard the health of the populace in Africa. Such integration may encourage appropriate referrals.

Kromberg et al. (2008) affirm that the children with intellectual disability in this context are highly disadvantaged. With little educational support, the disability could result in an unnecessary lifelong handicap despite availability of assessment and support services in the country. This has implications on the health and educational policy regarding children in rural communities such as the one studied.

Some African studies document that intellectual disability can be either congenital or acquired, and in some cases the cause cannot be ascertained. The congenital group is characterised by high representation of Down's syndrome (Ekanem et al., 2008; Izuora, 1985; Otaigbe, 2007). Some of the other congenital causes of intellectual disability that have been reported in Africa include foetal alcohol and partial foetal alcohol, Rubinstein-Taybi, and Cornelia de Lange syndromes (Ellaithi et al., 2007; May et al., 2007; Sinnette & Odeku, 1968). Acquired causes are linked to poor obstetric care and procedures, child welfare care, infections such as onchocerciasis and HIV, and psychosocial factors (Halloran et al., 2009; Olusanya & Ofovwe, 2009; Ovuga, Kipp, Mungherera, & Kasoro, 1992). Van Rie, Mupuala, and Dow (2008) report both direct and indirect effects of HIV infection on the neurodevelopment of pre-school-aged children in the Democratic Republic of Congo. Apart from the direct central nervous system effect on HIV-infected children, the study also discovered milder neurodevelopment deficiency in HIV-affected children, which may be linked to psychosocial factors.

Moreover, epilepsy is reported as a cause of intellectual disability in Nigeria (Izuora, 1985), and this may be considered to be more of an acquired cause. Another study also indicated that commonly prescribed anti-epileptics like phenobarbitone and benzodiazepines have a negative

effect on cognition; however, they are still being used in Nigeria (Sunmonu, Komolafe, Ogunrin, Oladimeji & Ogunniyi, 2008). This calls for better health policies for the protection of patients in Africa.

The main problem of planning for the social integration and inclusion of PWD in Africa is lack of disability statistics. Most of the countries in the continent do not have national disability statistics to aid planning (Fujifura et al., n.d.). Only one study in Africa documents such in a rural setting, which is not a common thing to come by (Christianson et al., 2002). Overall prevalence was 3.6% and the prevalence of mild intellectual disability (MID) in the sample was 2.9%. Undefined aetiology in 80.5% of the MID was suggested to be related to preventable factors such as social circumstances, maternal and child diet, maternal education, and early infant and childhood intellectual stimulation. High prevalence of foetal alcohol and partial foetal alcohol syndromes, ranging from 6.8-8.9%, was also reported among children of another South African community, and was almost four times higher among those in the rural setting (May et al., 2007). Thus, governments in Africa need disability statistics at all levels. It would also be a good idea to make age-specific and disability-specific statistics available because it will go a long way in meeting the specific needs of the various types of disability (and circumstances associated with them) under different settings in Africa.

The available literature suggests that epilepsy is the most common of the conditions associated with intellectual disability in Africa. Iloeje (1989) found 18.0% prevalence of intellectual disability, higher than what is expected in the general population, among children with epilepsy in Nigeria. Another study in the same country indicates low academic performances associated with low IQ and seizures in epileptic children (Ibekwe, Ojinnaka, & Iloeje, 2007). In addition, intellectual functioning in children with epilepsy was found to be influenced by lengthy epilepsy duration, lengthy anti-epileptic medication usage, an early age of onset, and increased seizure frequency (Sunmonu et al., 2008).

Moreover, an association between Down's syndrome and congenital heart disease has been documented among Africans. A Sudanese study revealed that 48.0%, 23.0% and 6.0% of persons with Down's syndrome also had atrioventricular septal defect (AVSD), ventricular septal defect (VSD) and tetralogy of Fallot (TOF), respectively (Ali, 2009). In addition, potential behavioural

problems were identified among children in a South African community known for its high prevalence of foetal alcohol syndrome (Giarelli, Clarke, Catching, & Ratcliffe, 2009). Furthermore, organic mental disorders were identified as causing psychiatric admissions in 4.4% of cases of adolescents and young adults in a study (Ajibola, Yussuf, Issa, & Parakoyi, 2008).

Attitudes are the basis for the marginalisation of PWD in the society. A South African study reported that the society underestimated the competence of all PWID and did not believe in inclusion, as is the case in some other African countries like Nigeria (Bardon & Corbin, 2006). It is obvious that the society's judgment about this group of people was not based on substantial evidence of their capability because the sample in this study demonstrated little knowledge of intellectual disability and individuals with the disorder. Thus, there is a need for awareness creation.

Writing about intellectual disability in Nigeria, Dada (2007) states that Nigerian society labels persons with intellectual impairment with derogatory names and, in the past, considered them as animals that were killed or abandoned to die. Another study in Nigeria also revealed an increasingly neglectful attitude by mothers toward children with intellectual disability (Abasiubong, Obembe, & Ekpo, 2008). This indicates that efforts should aim to change parental and societal attitudes towards this group to ensure their adequate care and survival. Bardon and Corbin (2006) argue that 'attitudes play an important role in the lives of individuals with intellectual disabilities because attitudes influence services availability and how policies are implemented to support individuals with intellectual disabilities.'

Furthermore, individuals with intellectual impairment need adequate healthcare services because of the associated health problems. However, little is known about the health status of PWID in Africa, including their access to and utilisation of healthcare services. The little available information points to poor health conditions among Nigerians with intellectual disability. For example, a study in Nigeria revealed a high incidence of refractive errors in persons with Down's syndrome attending four special schools in Benin City (Ebeigbe & Akpalaba, 2006). Worse oral health than in the control group has also been reported among Nigerian children with special needs (Oredugba, 2006) and persons with Down's syndrome (Oredugba, 2007).

Available literature also points to the lack of access to healthcare services among PWID in Africa. A typical example was documented in South Africa, where children with Down's syndrome who had also been diagnosed with congenital heart diseases were being denied corrective heart surgery on the grounds that they had low IQ, and therefore were less valued than other children (Lawrenson et al., 2006; Roussot, Lawrenson, Hewitson, Smart, & de Decker, 2006). This raises the question of what determines the right to life in the face of scarce resources. In this case, it is obvious that these children were being denied the right to life because of their intellectual disability; hence they were viewed as unproductive. This is clearly a projection of eugenics. Another study in Nigeria indicated that only 19.3% of dentists sampled reported having adequate knowledge of how to manage children with special needs. Most of them rated the behaviours of such children as challenging (Oredugba & Sanu, 2006).

It has also been documented that oral health services utilisation by children with special needs is poor in Nigeria but not significantly different from that of the control group (Oredugba, 2006). Generally, many Nigerians don't prioritise oral health. So, the picture may be different in other countries. Most Nigerians only visit dentists when there is a problem. This may be worse in the case of PWD due to lack of accessible transport, which makes it difficult to move around, or negative parental attitudes towards such children. In addition, a study in urban Tanzania documented a high patronage of traditional healers for treatment of mental disorders (Ngoma, Prince, & Mann, 2003). The authors suggest failure of primary healthcare services to adequately detect and treat these disabling disorders as the cause of the observed trend.

Attempts to develop strategies for early detection of developmental disability in children have also been undertaken in Africa. A recent article proposes integration of early screening for developmental disability into routine immunisation, specifically for Bacille Calmette-Guérin (BCG) and diphtheria-pertussis-tetanus (DPT) in Nigeria (Olusanya, 2009). Routine immunisation is recognised as the longest and most successful survival health programme worldwide. Conversely, the dearth of essential mental health human resources presents a challenge to the diagnosis and management of intellectual disability in Africa (Njenga, 2008). Despite the abundant modern intelligence scales for assessing educational placement of learners with intellectual disability, many are not yet standardised for use in many sub-Saharan African

countries (Bakare, Ubochi, Okoroikpa, Aguocha, & Ebigbo, 2009). As a result, many of the cases that could have benefited from management are missed or misdiagnosed and are subsequently condemned to a sub-average quality of life. Even with those cases that are diagnosed, there are minimal resources to adequately manage their care to the point that they become functional.

Many African countries do not provide adequate education for their citizens with intellectual disability. They lack educational policies necessary for the management of individuals with intellectual disability. A study in Ghana found that ‘placement of mild to moderate mentally retarded children in the five special schools had a low relationship to their social skills development, whereas teachers’ competency in lesson delivery correlated positively with children’s social skills development’ (Quist, Nyarko, & Deku, 2007). In South Africa, gross inequalities were also documented with respect to the education received by children with Down’s syndrome and non-disabled children as at 1996 (Muthukrishna, 1996).

Persons with intellectual impairment are vulnerable to sexual abuse and, more often than not, find it difficult to obtain justice from the courts of law because they are perceived as incompetent witnesses (Dickman & Roux, 2005). This is typical in African countries where there are often no forensic experts to give ‘hard evidence’ demanded by courts. Moreover, when such experts are available, as is the case in South Africa, different pieces of legislation are not in harmony with respect to the terms they use in reference to mental illness or mental retardation and with the scientific nomenclatures used by experts (Pillay & Kritzinger, 2008). Legal support for the rights of PWID is urgently needed in Africa.

Finally, though there seem to be a handful of studies that directly or indirectly address intellectual disability in Africa, caution has to be exercised in their analysis. A critical look at the studies reveals that most of them are based on clinical evidence that describes the different disorders that present with low intellectual functioning. At this point in its development, the continent needs research in intellectual disability that could offer baseline information for formulating hypothetical interventions and implementing actual interventions to improve the status and lives of persons with this disorder. It seems apparent that Africa is yet to exceed the foundations laid out by Western researchers in this field: those of case report and description

(Borofice, 1978, 1981; Ellaithi et al., 2007; Otaigbe, 2007; Sinnette & Odeku, 1968). What is desperately needed now is the kind of research that will influence policy changes that favour this disadvantaged group.

Meanwhile, it may be almost impossible for Africa (except for South Africa) to achieve this now due to lack of resources for such research endeavours. Thus, as advocated by Njenga (2009), the continent needs urgent collaborative opportunities with centres of excellence in intellectual disability in developed countries in order to make a difference in the lives of citizens with intellectual disability. There are lots of opportunities in this area that could be tapped into by willing collaborators.

Most importantly, society's attitudes towards this group of individuals have to change. This could be achieved by putting policies in place for public education about disability, particularly intellectual disability. With positive attitudes, the present inequality being experienced by these individuals will be addressed, and the 'differences' could be accommodated. There is also the need for Africa to train more professionals, specifically in the area of intellectual disability, and to integrate intellectual disability into the training of all professionals so as to cater adequately for PWID. In this way, universal design could be adopted to accommodate the needs of PWID in every programme and policy undertaken in Africa.

2.4 Adolescence

According to the Canadian Paediatric Society (2003) and WHO (1998), adolescence is defined as being between the ages of 10 and 19 years. This is a period characterised by rapid physical growth, appearance of secondary sexual characteristics and the attainment of reproductive maturity (Penny, Bennett, Herbert & Herbert, 1994). In addition, a lot of self-identity and self-discovery occurs at this developmental stage. Hence, adolescence is a time of experimentation, establishment of autonomy and being confronted with new challenges (R.J. DiClemente, 1992). Unlimited experimentation can lead to habit-forming risk behaviours like alcohol and drug

abuse, delinquency and early unprotected sex (Perkins, 2001). All of these have implications for HIV infection in adolescents.

2.4.1 Adolescents' risk-taking behaviours

Löwe (2007) argues that risk and risk management are important in the adolescent's identity-forming process, and they learn responsibility by taking risks. This is more common in boys than girls, and tends to reduce with age. According to him, because risk-taking is voluntary and often a conscious exposure to experimentation, risk and danger, knowledge about consequences of risk-taking behaviour does not necessarily decrease risk-taking behaviours. Interventions should focus on reducing the harms associated with risk-taking behaviours rather than on trying to reduce the behaviour itself. Therefore, adolescents should be educated to use this feature positively, by helping them develop their risk competence. Hence they have to be involved in the development of interventions aimed at reducing their risk-taking behaviours.

Education for risk competence can take various forms (Löwe, 2007):

- Development of life skills and competences
- Promotion of coping strategies for negative emotions and control of impulsive behaviour
- Provision of training to resist peer pressure and seduction
- Promotion of reflection of risks in the peer group
- Empowerment

Risk-taking behaviours are fast becoming a great threat to the health of adolescents the world over. A surveillance survey in the US revealed that youth and young adults were involved in health-risk behaviours such as driving under the influence of alcohol, carrying a weapon, using substances, physical fighting, and attempted suicide (Eaton et al., 2006). In addition, unintended pregnancies; STIs, including HIV infection; unhealthy dietary behaviours, and physical inactivity contributed to substantial morbidity and social problems among this survey group.

Similarly, a survey by WHO on health-behaviour among school-aged children (11-15 years) in Europe and America (WHO, 2004b), covering 35 countries and regions, reported experimentation with tobacco, cannabis and alcohol, and adopting regular use thereof as they advanced in age. Physical inactivity and sedentary lifestyles were also reported among the sample. Geographical variation, age and gender were observed to affect the risky behaviours studied, with males being more predisposed to substance abuse and females being more prone to physical inactivity. This suggests there are socio-cultural influences on risky behaviours.

Furthermore, low fruit and vegetable consumption was reported across the sample and decreased with age, with girls reportedly eating more fruits and vegetables across all age groups. Both genders were dissatisfied with their body weight, but girls (over 33.0%) perceived their bodies as being too fat more often than boys (over 20.0%) and were on a diet or engaging in other measures to lose weight. Both behaviours increased with age among girls only. This may be connected to girls' perception of self-image and revolve around the physical changes that occur in adolescence, particularly among girls. The need to lose weight may also be driven by the influence of peers. If left unchecked, this desire to be thinner may lead to drug abuse and/or misuse of medications that reduce one's appetite. These medications act on the central nervous system and could be addictive. Drug abuse and/or misuse may be a great problem in some developing countries with weak pharmaceutical regulatory practices, where prescription-only medications could be purchased over-the-counter. They can also progress to taking narcotic drugs to achieve their goal of being slim.

Furthermore, about 50.0% of the adolescents reported having sustained two or more injuries in the previous year, and boys were more prone to this than girls. However, the rate of injury among 15-year-olds in the highest-ranking country was twice that in the lowest-ranking country. About one third of the sample also reported at least one case of bullying, fighting and victimisation in the previous year; with varying rates across countries, regions and gender (boys were involved more often). Victimisation did not vary much across genders.

Risk-taking behaviours among adolescents have also been documented in developing countries (Palen, Smith, Flisher, Caldwell, & Mpofu, 2006; Pela, 1989). According to WHO (2002), the historically low level of substance use in developing countries has now begun to rise.

Environmental, family and individual factors have been associated with adolescents' risky behaviours. A South African study by Brook, Morojele, Pahl, and Brook (2006) revealed that delinquency, deviant attitudes and association with deviant peers were the greatest predictors of drug use among adolescents in an urban setting. The study also found that parental style correlated with adolescents' use of illegal drugs. Inadequate parenting behaviours that promote a mutually affectionate, conflict-free attachment were implicated. Similar results were obtained in another study on street children in Nigeria, where low connectedness with mothers and friends was found to be related to substance use (Adebiyi, Owoaje, & Asuzu, 2008). However, the study did not specify whether these friends were deviant or not, but it could be assumed that they were non-deviant friends. This stresses the role of relationships in adolescents' drug use.

Environmental factors contribute to substance use among adolescents. In India, adolescents reported substance use because of general stress and academic pressure (Kotwal, Thakur, & Seth, 2005), and in South Africa adolescents reported that discrimination and violence were key triggers to such behaviour (J.S. Brook et al., 2006). Modelling media portrayals of commonly depicted substances like tobacco and alcohol, in advertising or entertainment, has been identified as a trigger for substance use. Aina and Olorunshola (2007-2008) argue that the significant portrayal of substance use in Nigerian films could serve as a trigger or reinforcement for substance use among adolescents and young adults. The authors' viewpoint was confirmed by Indian adolescents who reported that they had been influenced to use tobacco through media advertisements (Kotwal et al., 2005).

In addition, culture appears to influence substance use, as indicated by Reddy, Resnicow, Omardien, and Kambaran (2007). A cross-cultural comparison between South African and American high school students revealed that Americans had a lower rate of past-month alcohol and marijuana use than South Africans, but the latter group had a higher rate of illicit hard drug use. The study also documented variations in the predictors of drug use in both countries in which 'female gender was protective against tobacco, alcohol, and marijuana use in South Africa, whereas in the United States it was protective only against marijuana use'. Race or ethnic differences were also observed, whereby 'black race/ethnicity was associated with lower rates of

past-month cigarette and alcohol use in both countries, but the protective effect for alcohol use was stronger in South Africa’.

Moreover, two studies describe a developmental sequence of substance use among South African adolescents. One of the studies established race variations in this sequence, whereby black and white students started with cigarettes or alcohol, progressed to cannabis, and then on to Mandrax, Ecstasy or crack (Flisher, Parry, Muller, & Lombard, 2002). Coloured students hailing from Asian, European and African ancestry, on the other hand, started with cigarettes, progressed to alcohol, cannabis and then Mandrax, Ecstasy or crack. The latter was confirmed by a more recent study in the same geographical location (Patrick et al., 2009). Both studies demonstrated a consistent pattern across gender. The findings emphasise the need to adapt prevention programmes across contexts.

Finally, risky sexual behaviours have been documented among adolescents. Bachanas et al. (2002) report risky sexual behaviours and outcomes such as early sexual debut (14 or younger), sexual activity, multiple sexual partners, inconsistent condom use, STIs and pregnancies among African-American adolescent girls. Predictors of risky sexual behaviours among the sample were substance use and peers’ influence. Substance use was a stronger predictor of risky sexual behaviour than the latter in the study, and is not surprising because adolescents are more likely to engage in sex or have unprotected sex under the influence of alcohol or drugs. Perceived social support and self-efficacy to practice safe sex were not significantly related to adolescents engaging in risky sexual behaviour.

In an African study, lifetime substance use was associated with gender, age, sexual experience, greater likelihood of inconsistent condom use and having multiple and casual sexual partners (Amoateng, Kalule-Sabiti, & Narayanan, 2007; Palen et al., 2006). While only alcohol use and the mother’s employment status determined condom use, a perceived higher socio-economic status was positively associated with lifetime sexual activity in South Africa (Amoateng et al., 2007). This may vary in other parts of Africa as the dynamics of social class in South Africa are unique. The nexus between substance abuse and risky sexual behaviour is of great importance because of its implication for HIV infection. Adolescents who have moved on to injectable drugs not only double their risk of HIV infection but also pose a threat to their sexual partners.

2.4.1.1 Risk-taking behaviours of adolescents with disability

Studies on risk-taking behaviours of adolescents with disability are sparse, and those that are available come from developed countries. However, even these have shown mixed results to date. Some conclude that adolescents with disability do not differ much from their peers in terms of risk-taking behaviours (Suris, Resnick, Cassuto, & Blum, 1996), whereas others find significant differences, reportedly due to social isolation and better parental monitoring, which makes them less likely to be involved in risk-taking behaviours (Dorner, 1977). Other investigators found that adolescents with disability were more likely to engage in sex, have multiple partners and use tobacco and marijuana than their non-disabled peers (Choquet, Du Pasquier Fediaevsky, & Manfredi, 1997; Maag, Irvin, Reid, & Vasa, 1994). However, like their non-disabled counterparts, adolescents with disability are also predisposed to risk-taking behaviours due to biological, environmental and personal factors (Jessor, 1993; Resnick, et al., 1997).

As reported by Blum, Kelly and Ireland (2001), adolescents with disability were significantly more likely to report high risk-taking behaviours like suicide attempts, regular substance use and having engaged in sexual intercourse before age 12 than the comparison group. They argue that the environmental predictors observed in adolescents with disability could be traced to less access to factors associated with risk reduction, and lack of positive relationships evidenced by less family connectedness, lower parental expectation for school completion, fewer activities with parents, less parental presence at home at key times of the day, lower religious practise, lower self-esteem and poorer academic performances. All of these factors increase their inclination to engage in more risky behaviours than their peers without disability, and it suggests that a disability-specific approach to risk reduction interventions should be adopted for adolescents with disability.

2.4.1.2 Risk-taking behaviours of adolescents with intellectual disability

It is increasingly difficult to find studies that focus on risk-taking of adolescents with intellectual disability as opposed to on adolescents with disability and non-disabled adolescents. Rurangirwa, Braun, Schendel, and Yeargin-Allsopp (2006) report a population-based prospective study of young adults (21-25 years) in the US with and without developmental disability (DD) whose risk-taking behaviours were followed from the age of 10 and upwards. The young adults with a history of DD reported less involvement in risky behaviours like tobacco and substance use and sexual activity than young adults without a history of DD, but were more likely to be at risk because of lack of preventative services such as sex education, HIV/AIDS education and preventative services for women (Rurangirwa et al., 2006). This may be connected with the misconception that they are not sexually active, and so do not need such education and services. They also had a lower Body Mass Index (BMI) and faced more victimisation (being attacked or beaten) than their peers without a history of DD. Rurangirwa et al. (2006) suggest that these young adults with DD probably were not participating in risky behaviours due to being less exposed to social situations that could potentially influence negative behaviours. These findings were corroborated by a four-year longitudinal study in the (United Kingdom) UK which also reported a lower rate of substance use among adolescents with moderate intellectual disability than in the non-disabled control group (McCrystal, Percy, & Higgins, 2007).

McCrystal, Percy, and Higgins (2007) warn that caution has to be exercised when interpreting the policy implications of these findings. The low prevalence of substance use among learners with intellectual disability does not mean that they don't need intervention programmes related to substance use. The world over, the trend now is for this group to live within the communities, where they may easily come into contact with drugs. Currently, such initiatives are hard to come by and, as suggested by McCrystal, Percy, and Higgins (2007), this is because of lack of information about this group of people. However, in another study, Blum et al. (2001) reported a significantly higher tendency of suicide attempts, regular cigarette smoking, and first sex before the age of 12 years among young people with intellectual disability than in the comparison group.

2.4.2 Adolescents' sexual behaviours

According to Bower and Wingood (1992), adolescents are social and sexual beings; tend to experiment and take risks; and, most importantly, they seek independence from parents and other adults, and tend to conform to peer pressure. As such, their sexual health is usually under threat. Adolescents' sexual behaviours can lead to STIs, including HIV, or result in unintended pregnancies. Either way, their sexual health is affected, whether on a short- or long-term basis. Infection with STIs, including HIV, brings about short-term psychosocial and economic constraints. Pregnancy (if abortion is not chosen) is associated with both economic and social problems which could affect their future. If abortion is opted for, they stand the chance of incurring medical repercussions, which may be fatal in some instances.

In both the developed and developing world, high proportions of adolescents are initiating sex at an early age, are sexually experienced, sexually active, have multiple sexual partners and are involved in risky sexual behaviours like inconsistent condom use and substance use (Eaton et al., 2006; Taylor, Dlamini, Kagoro, Jinabhai, & de Vries, 2003; WHO, 2004b). The situation is of great concern in sub-Saharan Africa (SSA), which remains an epicentre of the HIV pandemic. Poverty is one of the main driving forces of HIV infection, and sub-Saharan Africa is one of the poorest continents.

Studies have consistently shown that many adolescents in SSA are sexually experienced. Kaaya et al. (2002) document that the rate of reported sexual experience among in-school adolescents could range from as low as 3.0% to as high as 93.0%. They suggest that the large variations could be attributed to demographics. Gender differences do exist. Boys are more likely to report sexual experience than girls (Kaaya et al., 2002; Matasha et al., 1998; Nishimura et al., 2007). According to Kaaya et al. (2002), the expectation in Africa that women should be chaste and submissive to men whereas men are to be virile and initiate sex encounters may cause a report bias where women under-report and men over-report their sexual exposure.

The age of sexual debut is also reportedly getting lower in SSA. Kaaya et al. (2002) report that the age of sexual onset is between 12 and 15.5 years for boys and 13.6 and 15.9 years for girls. This is corroborated by studies that found high rates of sexual experience among younger

adolescents. For example, 80.0% and 68.0% of boys and girls respectively in primary schools in Tanzania were reported to be sexually experienced (Matasha et al., 1998). Further, in Mauritania, 40.0% of adolescents (12-16 years) were reported to be sexually experienced (Ndiaye, Abdallahi el, Diedhiou, Tal-Dia, & Lemort, 2005). Adolescents are initiating sex at a younger age, and this signifies the need for early sexuality education so that they may delay sex or protect themselves when they initiate sex.

In addition, as adolescence is a period of experimentation, it is possible for adolescents to want to have different sexual tastes, thus explore having more than one sexual partner. The number of sexual partners of adolescents in SSA is influenced by the age of their sexual debut and the duration of intimate sexual relationships (Kaaya et al., 2002). The authors document that between 13.0% and 83.0% of sexually active males and 2.0% and 49.0% of sexually active females had more than one sexual partner in their lifetime. In South Africa, Peltzer and Promtussananon (2005) reveal that 16.5% of sexually experienced junior secondary school students reported having at least six sexual partners. Moreover, a study by Karim, Magnani, Morgan, and Bond (2003) indicates that 4.0% and 11.0% of sexually experienced females and males, respectively, had more than one sexual partner three months prior to the study.

Furthermore, the pattern in SSA has always been that both old and young detest condom use, leading to higher exposure to STIs, including HIV, in the continent. Some gender differences do exist with respect to the rate of and reasons for condom use. Kaaya et al. (2002) document lower rates of consistent condom use among females (range 24.0-36.0%) than males (range 48.0-53.0%). In addition, as reported by Matasha et al. (1998), the reasons for condom use among girls included fear of pregnancy and parents, while boys used condoms for STIs and HIV prevention. However, besides demographics, Kaaya et al. (2002) suggest that increased emphasis on condoms being a means of prevention not only against pregnancy but also against STIs, including HIV, may have raised adolescents' awareness and increased their availability and use. Thus, the observed variation in rates across different sites may be a reflection of different stages of HIV/AIDS preventative activities in the various settings.

2.4.2.1 Adolescents' sexual behaviours in Nigeria

Sexual experience: According to the 2003 Nigeria Demographics and Health Survey, NDHS, (National Population Commission (NPC) [Nigeria] & ORC Macro, 2003), 23.3% (females) and 17.4% (males) aged 15-19 years engaged in premarital sex in the 12 months preceding the survey. No difference was observed between urban and rural dwellers in terms of premarital sex. Similar findings were reported by a more recent national study based on data collected from the National HIV/AIDS and Reproductive Health Survey (NARHS). In this study, 22.0% of females and 18.0% of males aged 15-19 years had engaged in premarital sex (Fatusi & Blum, 2008). However, the gender trend is contrary to what local studies, which disaggregate gender among in-school adolescents from the various regions of the country, report (Ajuwon, Olaleye, Faromoku, & Ladipo, 2006; Oladokun et al., 2007; Slap et al., 2003), with the exception of one of the studies from Plateau State (James, Ekwempu, Aigbokhae, Ukatu, & Ujah, 2006). This was probably due to the national versus local coverage of the studies and variations in the age groups covered.

Age at sexual debut: Findings of the 2003 NDHS indicated that 20.3% and 7.9% of female and male adolescents respectively in the age range of 15-19 years had initiated sex before the age of 15. The proportion was higher among the ever-married adolescents than the never-married ones, signifying a higher exposure to STIs and HIV in this group. About 26.0% of women and 7.3% of men living in the rural areas had initiated sex by age 15 compared to 10.7% and 5.3% of women and men respectively in the urban areas. Though the age of sexual debut is similar to the NDHS's findings, no gender difference existed regarding the age of sexual debut in some local studies among in-school adolescents (Ajuwon et al., 2006; O.I. Fawole, Asuzu, & Oduntan, 1999; Slap et al., 2003). This is most likely due to education. The NDHS shows that the percentage of women who had initiated sex by age 15 decreased with education: from 42.0% in those with no education to less than 1.0% in those with higher education. In addition, 6.7% of adolescents in a study by Mabayoje et al. (2005) reported having their first sexual exposure when they were younger than ten. This may be due to experimentation if with other children or sexual abuse if the partners were adults.

Reasons for having sex: Adolescents engage in sex for various reasons. Studies in Nigeria revealed these reasons to be primarily out of physical attraction (Temin et al., 1999), but could be motivated by financial/material gains (Nwankwo & Nwoke, 2009; Temin et al., 1999). Other reasons include mutual agreement, coercion/rape, curiosity/testing oneself (Mabayoje et al., 2005; Nwankwo & Nwoke, 2009; Orji & Esimai, 2005), pressure from sexual partners (Mabayoje et al., 2005), fun/pleasure, peer pressure (Etuk, Ihejieamaizu, & Etuk, 2004; Moronkola & Fakeye, 2007-2008; Nwankwo & Nwoke, 2009), intimacy and friendship (Etuk et al., 2004). In addition, showing love to retain a partner and lack of sexuality information from parents were implicated (Nwankwo & Nwoke, 2009).

Condom availability: Knowledge of where to source condoms is higher with males, urban dwelling, and one's level of education. For example, 19.0% and 49.9% of 15-19-year-old females and males respectively knew where they could source condoms. Only 4.0% of young women with no education reported knowing where to acquire a condom, but this increased to 64.0% among women with higher education. Almost twice the number of young female urban dwellers (35.2%) knew where to get a condom than their sisters in the rural areas (18.3%). Regional variation is also wide. Twice as many young men in the South West (84.0%) than in the North West (42.0%) knew where to source a condom from. This is more dramatic among women, ranging from 6.0% in the North West to 51.0% in the South West. The observed differences may have to do with the level of STI/HIV prevention programmes in the various settings, religion, and male dominance in sexuality decisions.

Condom use during first sexual encounter: Among young, never-married men, only one fifth reported using a condom the first time they had sex, though almost half reported doing so the last time they had sex (National Population Commission (NPC) [Nigeria] & ORC Macro, 2003). In addition, more males aged 15-19 years (10.6%) used condoms during their first sexual encounter while only 6.5% of females did so. Young women and men with higher education are the most likely to have reported using a condom the first time they had sex, as are women and men in the South-West. Again, condom use at first sex was higher in the south than the north.

Condom use during last sexual exposure: Among the sexually experienced, never-married females, 23.0% used condoms during their last sexual intercourse, while 32.8% of males

reported doing so. Nigeria's patriarchal society may be responsible for the difference, whereby males are expected to control sexual decisions and women are expected to be passive in sexual matters. The rate of condom use by urban dwellers during their last sexual exposure was nearly double that of rural dwellers. This is not surprising because of the reported rural-urban difference in accessing condoms. Among the regions, the same trend continued, where southerners use condoms more than northerners, except for in the North Central region, which always showed trends very close to those observed in the south with respect to all of the indicators used in this NDHS.

Reasons for low use of condom: Adolescents detest using condoms mainly due to decreased pleasure (Abdulraheem & Fawole, 2009; Temin et al., 1999). Furthermore, there are claims that they can burst and cause injury (Temin et al., 1999). The urgency with which adolescents approach sexual intercourse is also noteworthy, as documented by Temin et al. (1999), in that the participants reported that putting on a condom wastes time. This implies that when they are ready to have sex, anything else, including their health, becomes secondary to the act. It was also implied in the study that condom use communicates lack of trust. In a male-dominant society like Nigeria, this may make condom negotiation particularly difficult for girls. They then stand the risk of exposure to STIs and HIV.

Age disparity in sexual relationships: Age disparity in sexual relationships is a major factor in the spread of HIV. The virus can be introduced into a young, uninfected cohort if a young uninfected person has sex with an older infected partner (National Population Commission (NPC) [Nigeria] & ORC Macro, 2003). The findings of the 2003 NDHS revealed that one in five (21.3%) female adolescents aged 15-17 years had high-risk sex with men who were ten or more years older. Furthermore, 10.3% of these female adolescents were not married. A major reason for this among unmarried female adolescents is financial/material gains (Okpani & Okpani, 2000). Otherwise, most adolescents have sex with their peers (Moronkola & Fakeye, 2007-2008).

Multiple sexual partners: Limiting one's number of sexual partners can reduce the risk of HIV infection for the sexually active. In this survey, the percentage of 15-19-year-olds with two or more partners was low (0.9% females and 4.9% males). When generally considering the age

group of 15-24, it emerges that having multiple partners varies by region, and according to gender and level of education. More males than females reported having multiple partners. By region, 7.0% of women in the South-South and 16.0% of men in the North-East had more than one partner. The regional and gender differences could be explained in terms of the high financial capability of men in the oil-rich areas of South-South, which may make more women available for sexual activities, the double standard, as well as religious beliefs which permit men to have multiple sexual partners. Also, 0.9% of women with no education and 6.7% with higher education reported having multiple partners. Among men, 1.3% of those without education and 11.1% of those with higher education reported the same.

Sources of information about sexuality, reproductive health and HIV/AIDS: Adolescents obtain their sexuality (Etuk et al., 2004; Nwankwo & Nwoke, 2009), reproductive health (Adinma, Agbai, Okeke, & Okaro, 1999; Orji & Esimai, 2005) and HIV/AIDS (Unuigbo & Ogbeide, 1999) information predominantly from their peers. However, other studies reported the media to be the main source of HIV/AIDS education for adolescents (O.I. Fawole et al., 1999; Nwokocha & Nwakoby, 2002).

2.4.2.2 Sexual behaviours of adolescents with disability

Studies on the sexuality and sexual behaviours of adolescents with disability are sparse compared to those about their non-disabled peers (M.M. Cheng & Udry, 2002; Low & Zubir, 2000). Most of the available studies were undertaken in the developed world, and only very few focus on African countries. This is particularly so for adolescents with intellectual disability, who are often more marginalised than other adolescents with disability. Over the years, PWD generally have been assumed to be asexual (Sawin, Buran, Brei, & Fastenau, 2002), and attention is hardly ever paid to their sexuality.

In a study to compare sexual behaviours of adolescents with and without disability or chronic conditions in Spain (Suris et al., 1996), it was revealed that adolescents with disability did not differ from their peers without disabilities in terms of their sexual activities, namely with regard to: having ever had sexual intercourse, age of sexual debut, pregnancy involvement, patterns of

contraceptive use and sexual orientation. However, they were more vulnerable to sexual abuse (Suris et al., 1996; Wazakili, Mpofu, & Devlieger, 2006), which may be connected to their sensory, physical, intellectual or mental disability.

Wiegerink, Roebroek, Donkervoort, Stam, and Cohen-Kettenis (2006), in their study of social and sexual relationships of adolescents and young people with cerebral palsy, found that almost half of the sample had boyfriends/girlfriends and were having sexual intercourse (46.0%). Similarly, a study among adolescents with spina bifida in Australia reported that 60.0% of the sample was involved in intimate relationships, while 25.0% engaged in sexual intercourse (Sawyer & Roberts, 1999). Furthermore, a study conducted among blind adolescents in the Netherlands revealed that 94.4% had fallen in love; 75.0% had had romantic dates; 54.2% were sexually experienced and 13.9% had had more than one partner (Kef & Bos, 2006). In addition, 37.0% and 30.0% reported unwanted sexual attention and touching. However, social and sexual relationships were lower in frequency in adolescents with disability than with their able-bodied peers (Kef & Bos, 2006; Sawyer & Roberts, 1999; Wiegerink et al., 2006).

The age of sexual debut was lower than 18.5 years for over half of the blind adolescents in the Netherlands (Kef & Bos, 2006), but, generally, they initiated sex at an older age than their peers without disability. As in the general population, boys did have sexual experiences at a younger age than girls. However, a study in Uganda documented the reverse, with the age of sexual debut being 16 years for women and 18 years for men (Mulindwa, 2003).

In addition, there is evidence that PWD are exposed to risky sexual behaviours more than non-disabled persons. For example, an alarming 22.0% of women from two districts in a Ugandan study reported that their first sexual experience was as a result of rape (Mulindwa, 2003). More men (22.0%) than women (16.0%) had ever engaged in sex for gain. Current use of condoms was only 24.0% and 10.0% for men and women respectively, confirming the usual gender trend in the general population. Another study among young people with physical disability in South Africa showed that some of the participants were involved in sexual intercourse under the influence of alcohol (Wazakili et al., 2006).

All of the above findings point to the need for comprehensive sexuality and HIV prevention education among young PWD. They are more exposed to the sexual risk factors for HIV transmission than their non-disabled counterparts.

2.4.2.3 Sexual behaviours of adolescents with intellectual disability

Research has found that people with intellectual impairment are sexually active, although they might not always be perceived as such (Clark & O'toole, 2007). Traditionally, the sexual rights of PWID have been neglected (Kempton & Kahn, 1991), and this might explain why there is a dearth of studies that document sexual behaviours among PWID, particularly in Africa. One study among learners with mild mental retardation in South Africa (Dawood et al., 2006) found that 14.0% of the adolescents aged 14-16 years were sexually active. Of this, 31.0% reported having had more than one sexual partner in the last six months. Only 46.0% of the respondents reported consistent condom use.

Another South African study among learners with mild and moderate intellectual disability reports that 25.0% are sexually experienced; with males (20.0%) being more sexually experienced (Gilbert, 2007). Males most often reported that their first sexual partners were their peers, while 67.0% of the sexually experienced females had their first sexual encounter with older males (over 30 years). These females experienced their first sexual experience as a result of rape. Also, having multiple partners was reported by 7.0% of the sample (all males). This is similar to the trend among non-disabled adolescents, in which males have a higher propensity to have multiple partners than females. The reasons given by most of the sexually experienced respondents were that they loved their partner (10.0%), followed by experimentation (7.0%), peer pressure (5.0%) and rape (3.0%). These findings emphasise the need for social and relationship skills among this group of adolescents.

According to M.N. Oliver et al. (2002), sexuality remains an important aspect of the lives of persons with mental retardation, despite limited knowledge of and opportunities for sexual development. Studies have documented that individuals with mental retardation want to have

relationships and to get married (Timmers, DuCharme, & Jacob, 1981), and those that are married expressed satisfaction with their marriages (Craft & Craft, 1979). Moreover, married couples involving partners with mental retardation have the same chance of divorcing as non-disabled partners do, and prefer being married to being single (Kempton & Kahn, 1991).

2.4.3 Factors influencing sexual behaviours among adolescents

Studies have shown that a number of factors determine adolescents' sexual behaviours. These predictors can be classified into two broad categories:

- Individual factors – biological (early pubertal development), age, gender, educational achievement, nature of relationship with partner, risk-taking behaviours, socio-economic levels, emotional well-being, exposure to media, sexual beliefs, attitudes and skills, religion, and sexual abuse
- Environmental factors – family characteristics (e.g. parental control and support; parent-child communication) and peer pressure

2.4.3.1 Individual factors

Early pubertal development: A study in the United States indicate that early pubertal development, such as early age of menarche for girls and early body development and hormonal levels for boys, influence sexual initiation in adolescents (Billy & Udry, 1983). However, this varies according to sex and race (Hayes, 1987). Hormonal factors strongly affect sexual behaviour in white boys, whereas this is not particularly evident in girls. In blacks, the effect of the social environment is stronger in determining sexual behaviour than physical maturity. Although the studies being reviewed here are from the United States, it could apply to African adolescents as well because hormonal changes occur in all human beings.

Age at sexual initiation: According to Hayes (1987), more adolescents are initiating sex at earlier ages. D.W. Brook, Morojele, Zhang, and Brook (2006) assert that the proportion of sexually active adolescents increases with age, and it is difficult to find young persons who have not initiated sex by the age of 20. For example, findings of the 2003 Nigeria Demographic and Health Survey (NDHS) indicated that over three quarters of women reported having initiated sex before age 20, and, by age 25, nine in ten women were sexually experienced (National Population Commission (NPC) [Nigeria] & ORC Macro, 2003). In addition, early dating in adolescents is likely to be positively associated with sexual experience, number of sexual partners and level of sexual activity in late adolescence (Brent C. Miller, McCoy, & Olson, 1986; Thornton, 1990). D.W. Brook et al. (2006) argue that age has both direct and indirect effects on risky sexual behaviour, through the parent-child relationship and associating with deviant peers.

Socio-economic conditions: The effect of socio-economic conditions on sexual initiation has been documented. Adolescents who live in poverty, particularly females, are more vulnerable to risky sexual behaviours than their peers from wealthy homes due to their relative lack of knowledge about risky sexual behaviours, lack of access to condoms, and lack of empowerment to negotiate safe sex (D.W. Brook et al., 2006). Hence, poverty is said to be associated with risky sexual behaviour: firstly because economic hardships and the resulting stresses reduce opportunities for positive parent-child relationships, and, secondly, due to the fact that adolescents from poor backgrounds are likely to have deviant friends (Jersild, Brook, & Brook, 1978).

Gender: Many African studies on adolescents have documented that males engage in sex more frequently than females (Matasha et al., 1998; Owolabi, Onayade, Ogunlola, Ogunniyi, & Kuti, 2005; Taylor et al., 2003). According to Whitbeck, Hoyt, Miller, and Kao (1992), male adolescents are less likely to consider affection necessary before engaging in sexual intimacy than females. In addition, males have been shown to have the tendency to believe that sexual coercion strategies are justifiable (Feltey, Ainslie, & Geib, 1991). There is also a greater expectation of sexual intercourse with fewer dates for men but not for females (Knox & Wilson, 1981). Moreover, Kaaya et al. (2002) relate that African culture expects females to be chaste and

to submit to men whereas men are expected to be virile and to initiate sex. This may also contribute to more males getting involved in sexual activities than females in Africa.

Nature of relationship with partner: Longer relationships before sex can help to delay sex, and hence reduce the overall number of sexual intercourse partners. When sex is eventually initiated, attitudes to condom use have been shown to be better in long-term relationships (Lugoe & Biswalo, 1997; Lugoe, Klepp, & Skutle, 1996). In contrast, a long-term relationship makes adolescents more inclined to engage in risky sexual behaviour (Manuel, 2005). Manuel (2005) and Temin et al. (1999) reveal that adolescents reported low condom use because they found it unnecessary in a steady relationship that is based on love and trust. The question here is: how trustworthy is the 'trust'? Often, they base sexual behaviour decisions on their knowledge of a partner's sexual behaviour (the source of such information is usually the partner), which is most likely not truthful in many cases. Also, for adolescents, sex with casual partners is often spontaneous and unplanned, hence more likely to be unprotected (Paz-Bailey et al., 2003). Moreover, adolescents with romantic feelings for partners are more vulnerable to initiating sex earlier (Yoon, 2004). Girls in relationships with older males were also found to practise low condom use in a study by Bralock and Koniak-Griffin (2007). They suggest that this was probably due to the fact that such girls may lack effective sexual negotiating skills or possess insufficient power, or both, within the sexual relationship.

Educational achievement: An association exists between academic achievement and sexual experience of adolescents. Adolescent girls who score low on intelligence tests and place little value on educational attainment or have poor educational achievements are more prone to initiate sex at an earlier age than their peers who are educationally ambitious (Hayes, 1987). Similarly, Raine, Jenkins, Aarons, Woodward, Fairfax, El-Khorazaty, and Herman (1999), in their study of African-Americans and Latinos, reveal that good grades are one of the factors for delaying sex. Another study in Ecuador shows that adolescents with educational aspirations past high school were practising abstinence and using condoms fairly responsibly (Park, Sneed, Morisky, Alvear, & Hearst, 2002). This association is, however, related to socio-economic, psychological and situational factors (Hayes, 1987). More educated parents are generally wealthier than less educated parents, and, therefore, their children are more likely to be goal-

oriented and to place a higher value on achievement (Conger, 1973). Chilman (1980) argues that adolescents with these characteristics are less likely to start sexual intercourse during junior or senior high school, and that a girl's educational achievement (thereby pleasing parents and teachers) may inhibit her interest in boys, and may make her less interesting to boys.

Risk-taking behaviours: For many adolescents, risk-taking behaviour, particularly substance use, is associated with initiation of sexual intercourse and often precedes it. For example, in the UK, as at 2001, the age of sexual debut was 16 years (Wellings et al., 2001), while that of smoking, alcohol and drug use often occurred between 11 and 15 years of age (Boreham & Shaw, 2002; Tapert, Aarons, Sedlar, & Brown, 2001). Both alcohol and drug use are linked with multiple partners and unprotected sex (Duncan, Strycker, & Duncan, 1999; Guo et al., 2002). Furthermore, a study in Cameroon found that adolescents who reported smoking, alcohol and drug use also reported unprotected sex (Moore, Gullone & McArthur, 2004). In the US, another study of high school students found links between the number of sexual partners and other risk behaviours such as carrying a weapon, physical fighting, alcohol and marijuana use and/or cigarette smoking (Valois, Oeltmann, Waller & Hussey, 1999).

Emotional well-being: Those adolescents who are depressed or have anxiety (especially girls) are more likely to engage in sexual intercourse early in life due to low perceived self-efficacy (L.K. Brown, Danovsky, Lourie, DiClemente, & Ponton, 1997). Moreover, self-esteem is related to sexual behaviour through attitudes and self-efficacy. Self-esteem is positively related to sexual experience for adolescents who believe that sexual intercourse is always right, but negatively related for those who believe that the latter is wrong (B.C. Miller, Christensen, & Olson, 1987). However, Hayes (1987) suggests that girls with high self-esteem who believe they are capable of exerting control over the situations in their lives handle their sexual behaviours better than those who are passive and hold the belief that they do not have control over their lives. There is therefore the need for interventions to always place emphasis on self-esteem, especially for girls.

Religion: The role of religion in shaping adolescents' sexual behaviour has been documented in the literature. In a study of 11-25-year-olds, most of the sexually inexperienced participants scored significantly higher in reporting religion to be very important to their lives compared to

their peers who were sexually active, and also reported more closeness to friends they considered to be religious or spiritual (Holder et al., 2000). Ganczak, Barss, Alfaresi, Almazro, Almazrouei, Muraddad, and Al-Maskari (2007), in a study of youth in the United Arab Emirates, also found that religion was stated as the reason for not engaging in extramarital sex, in this instance, by 91.0% of the participants. Studies have also shown that the tendency to be devout and observant of religious custom and teaching is more important than any specific religious affiliation (Hayes, 1987; C. Odimegwu, 2005). In addition, religious adolescents are also less likely to engage in other risk-taking behaviours (smoking, drug and alcohol use) that are closely related to risky sexual behaviours. They may also have stronger social support to enforce behavioural norms (Hayes, 1987).

Exposure to media and the internet: Exposure to sexual content in the media has also been implicated in risky sexual practices by adolescents. In a study of 12-17-year-old adolescents in the US, it was found that having a television in the bedroom and spending time at home unsupervised were, at baseline, associated with heavier viewing of sexual content one year later (Kim et al., 2006). Moreover, this was more common among black, female, younger adolescents. This is likely to lead these adolescents to initiate sexual activities early. Furthermore, Nigerian adolescents' current exposure to the internet and pornographic materials plays a major role in influencing their sexual behaviours. For example, Adebayo, Udegbe, and Sunmola (2006) found that the increase in the rate of internet use increased risky sexual behaviours among adolescents. In another study, Egbochuku and Ekanem (2008) report that exposure to pornographic films exerted 65.1% of the influence on sexual practices of their sample.

Sexual abuse: In a study of high school students, abused male respondents were four to five times more likely to report multiple partners, substance use during the last sexual encounter and involvement in a pregnancy than their non-abused peers (Raj, Silverman, & Amaro, 2000). Similarly, abused females were twice as likely as their non-abused peers to report early sexual involvement, multiple partners, and a past pregnancy. Another study among high school adolescents found an association between multiple partners and being a victim of rape for white boys, or being a perpetrator or victim of dating violence for blacks (Valois et al., 1999).

Sexual knowledge, beliefs, attitudes and skills: Although differences exist between males and females in terms of their values regarding sexuality, personal values and attitudes, these factors influence sexual expressions for both genders (Plotnick, 1992; Rotheram-Borus & Koopman, 1991). These are further influenced by local social norms, and sexual behaviours that are contrary to personal values bring about low self-esteem and emotional distress (B.C. Miller et al., 1987).

Studies that aim to increase knowledge of sexuality are successful, but most often do not translate into behaviour change (Odu et al., 2007; Sallah et al., 1999; Vavrus, 2006). However, Vavrus (2006) affirms that when such messages to improve knowledge are supported by efforts to increase self-efficacy and develop skills, behaviour change is more attainable.

2.4.3.2 Environmental factors

Parental support and control: The nature of parents' relationships with their adolescent children influence the latter's sexual behaviour. Parental monitoring makes adolescents delay initiating sexual intercourse (Dilorio, Dudley, Soet, & McCarty, 2004; Sieverding, Adler, Witt, & Ellen, 2005), have fewer partners and use condoms if they are sexually active (R.J. DiClemente et al., 2001; Huebner & Howell, 2003). For example, studies found that adolescents' perception of parental disapproval of premarital sex was associated with lower tendencies to engage in sex (Babalola, Tambashe, & Vondrasek, 2005; Dittus & Jaccard, 2000). This signifies the importance of role-modelling parents' values about sexuality in influencing adolescents' sexuality (Babalola et al., 2005).

However, an imbalance was observed by Babalola et al. (2005) in their study in Côte d'Ivoire where, after controlling confounding factors, parental attitudes towards pregnancy were found to be significant for females but not for males. This calls for consistency in the attitudes of parents regarding their wards' sexuality. Furthermore, parental support has been shown to promote healthy sexual behaviour in adolescents due to a strong tie existing between them. Dittus and Jaccard (2000) also reveal that adolescents who expressed satisfaction with their relationship

with their parents were 2.7 times less likely to engage in sex than those who were not satisfied with such relationship. These adolescents also showed a higher probability of using contraceptives if sex occurred. In another study, 70.6% of adolescents who were not close to either of their parents initiated sex by the age of 17-19 compared to 57.9% of those who were close to at least one parent (Council of Economic Advisors, 2000).

Parent-child communication: Parent-child communication is not normative in many countries. This is particularly so in West Africa (Babalola et al., 2005). The more traditionally inclined the parent is about discussing sexuality topics with adolescents, the more difficult it is to break through the barriers to low sexuality communication that could help adolescents behave responsibly in sexual matters. For example, when there was high responsiveness from parents, sexual discussions between parents and adolescents were significantly associated with increased condom use during the adolescent's most recent experience of intercourse (Whitaker, Miller, May, & Levin, 1999). Another study among adolescents in Nigeria documented that those with whom parents had discussed family life issues were less likely to be sexually active than those who had never had such discussions (C.O. Odimegwu, Solanke, & Adedokun, 2002). The timing of parent-child communication is equally important. Babalola et al. (2005) discovered a gender difference in parent-child communication and sexual debut in their Côte d'Ivoire study. Parent-child communication was found to be associated with early sexual debut in males but not in females. They suggest that this was attributed to that parents commenced communicating sexual abstinence to their sons only after they had observed evidence of sexual activities or because they encouraged their sons to be sexually active.

Other family characteristics: Other factors include family composition and closeness, and the mother's age at marriage. Adolescents who live with both parents are less likely to initiate sex earlier than those who do not, or those who live with one parent (C.O. Odimegwu et al., 2002). Similarly, the larger the family is, the more likely it is that the older sibling will be sexually experienced early and will serve as a negative role model to younger siblings (Hogan & Kitagawa, 1985). Moreover, Oladepo and Brieger (2000) and Slap et al. (2003) found an association between sexual activity and a polygamous family unit. Though there is strong evidence to support the relationship between family composition and sexual activity, the

mechanism is poorly understood (Hayes, 1987). Hayes (1987) suggests that the stress resulting from parental divorce or separation and from the presence of many siblings might make an adolescent (especially girls) feel neglected and uncared for, and may possibly cause the adolescent to seek such attention in sexual relationships. On the other hand, it is possible that the stress resulting from such situations makes it difficult to effectively supervise their adolescents. Another explanation is that in families where there had been a divorce or the mother was sexually involved at an early age, there is the tendency for her to indirectly communicate an attitude of sexual permissiveness to her adolescents.

Peer pressure: The social environment plays an important role in the lives of adolescents. A major component of this is their peers or friends, who they associate with, observe and turn to for advice from time to time. Hence, the importance of peer influence in shaping the sexual lifestyles of adolescents is great. Peer pressure can take the form of challenges and/or dares, coercion and a need for social acceptability (Hayes, 1987). For example, in a study in South Africa, peer disapproval of condom use and peer pressure to be sexually active was documented (MacPhail & Campbell, 2001). Another study in the US revealed that adolescents whose friendship network mostly comprised low-risk friends were half as likely to initiate sexual intercourse as those who belonged to a friendship network made up of high-risk friends (Bearman & Brückner, 1999). Similarly, Okonkwo, Fatusi, and Ilika (2005), in a study of young people in Nigeria, reported that perception of sexual behaviour of peers and the nature of the peer pressure supported pre-marital sex. Conversely, gender differences do exist, whereby males are influenced by friends to engage in risky sexual behaviours more than females (D.W. Brook et al., 2006). A study among adolescents between the ages of 13 and 18 revealed that 13.0% of boys and 7.0% of girls mentioned pressure from friends as the reason for their sexual debut (Kaiser Family Foundation & YM Magazine, 1998).

2.4.4 Factors affecting sexual behaviours of adolescents with disability

There is a paucity of literature on factors influencing sexual behaviours of adolescents with disability. However, as adolescents will still be adolescents whether they are disabled or not, all of the factors discussed above as being predictors of adolescents' sexual behaviours hold for adolescents with disability as well (Donenberg, Bryant, Emerson, Wilson, & Pasch, 2003). However, there are other factors or experiences unique to adolescents with disability which also influence their sexual behaviours. In addition, the interplay between these factors and the general predictors of sexual behaviour for adolescents could complicate the case of adolescents with disability.

Some factors that make the situation worse for adolescents with disability are poverty, social isolation, parental overprotection, social sanction against marrying PWD, the myths of asexuality and 'virgin cleansing', low literacy levels and lack of access to sexuality education. These factors and/or interactions between them can make adolescents with disability experience depression, low self-esteem and rape more frequently than those without disability.

Poverty is both a cause and a consequence of disability. People with disability are the poorest of the poor and constitute 20.0% of the poor population (Elwan, 1999). Usually, it is expensive to live with a disabled family member, and an average family with an adolescent with disability to cater for is likely to be more impoverished than a family that does not have to care for an adolescent with disability. Poverty has been documented as a stressor that can interfere with parental attention and affection for a child in a family (D.W. Brook et al., 2006; Jersild et al., 1978). This can be particularly so for an adolescent girl with disability, who may become depressed as a result. When such tension exists in a family, an adolescent girl with disability is more likely than her non-disabled counterpart to seek attention in sexual relationships because she faces social isolation.

In addition, social isolation and social sanction against marrying PWD can make life worse for adolescents with disability (Choruma, 2007). They have fewer opportunities for recreation and socialisation (Wiegerink et al., 2006), and are likely to mishandle any opportunity that might come their way in terms of sexual exploration and experimentation, as well as engage in other

risky behaviours. A socially excluded adolescent with intellectual disability has little or no opportunity to learn social and relationship skills, as well as the current mores among his/her peers, and this may make him/her unacceptable as a partner. On the other hand, the tendency to want to please peers may make adolescents with disability consent to risky sexual behaviours. Moreover, potential sexual predators may exploit the fact that girls with disability are lonely and lure them into engaging in risky sexual behaviours like unprotected sex.

Furthermore, parental overprotection of girls with disability might also contribute to social isolation (Wiegerink et al., 2006). Social isolation has particularly been implicated in low self-esteem and/or depression for girls with disability (Wazakili et al., 2006; Yousafzai, Edwards, D'Allesandro & Lindström, 2005). Research has documented low dating frequency in adolescents with disability (Wiegerink et al., 2006). A low self-esteem is likely to result in low self-efficacy to say no to sex and to negotiate safe sex in girls with disability (Philander & Swartz, 2006; Wazakili et al., 2006; Yousafzai et al., 2005). The desire to be socially acceptable to sexual partners has also contributed to sexual exploitation of women and girls with disability (Philander & Swartz, 2006), even by men with disability, who are aware of the problems these women face, and want to take advantage of them. They are also likely to date older men (Gilbert, 2007), and there are documented cases of serial partners in this category of girls (Mulindwa, 2003).

Furthermore, adolescents with disability have fewer opportunities for sex education than able-bodied adolescents (Groce, 2004a). The literacy level is 3.0% for PWD in general and 1.0% for women with disability (Helander, 1998). According to UNESCO (2006), one third of the 77 million children that do not attend school are children with disability. So, they are seldom enrolled in schools, wherein most countries provide sexuality and HIV prevention education. Furthermore, because PWD are wrongly believed to be asexual, the probability is high that parents would rather discuss sexuality with their able-bodied adolescents (Wiegerink et al., 2006), if they do so. Large-scale sexuality and HIV education campaigns meant for the general population are often inaccessible to adolescents with disability due to the nature of their disability. In addition, illiteracy makes it difficult for them to read and access printed sexuality

and HIV education information contained in pamphlets, posters etc.; thus they know little about these issues and become vulnerable (Medel-Anonuevo & Cheick, 2007).

Lastly, Groce (1999) reported that PWD are three times more likely to be sexually abused than their peers without disability. The myth that PWD are not sexually active, and hence likely to be virgins, has increased the incidence of rape among females with disability in societies where it is believed that a man can be cured of HIV infection by having sex with a virgin (Groce & Trasi, 2004; Nganzi & Matonhodze, 2004). Therefore, adolescents with disability (especially girls) are likely to have been sexually abused and to be sexually experienced at an early age. In addition, their disability places them at a greater risk of sexual abuse than their able-bodied peers due to their physical weakness and hence ability to defend themselves and inability to assess or report violent situations exacerbates their plight (Rousso, 2003).

Therefore, sexuality of PWD deserves urgent policy attention, particularly in developing countries. This group of individuals' rights have to be addressed if the Millennium Development Goal six is to be achieved (P. Thomas, 2005). The fact that an estimated 10.0% of every population is disabled makes PWD an important component of any development initiatives. To ensure that policies effectively address the needs of PWD, more information is needed about the dynamics of their sexual behaviours, across countries and cultures. This will guide the development of tailored intervention programmes that meet their specific needs.

2.4.5 The burden of sexually transmitted infections (STIs), including HIV, among adolescents

Dehne and Riedner (2005) assert that adolescents make up 20.0% of the world population, with 85.0% of them living in developing countries. This large group may not be as healthy as people often think or expect them to be due to their risk-taking behaviours, including risky sexual behaviours which are major causes of morbidity and mortality in this age group (WHO, 1998). Adolescents are at risk of contracting STIs because they often engage in unprotected sex, whether in short- or long-term relationships (Dehne & Riedner, 2005). This is worse for girls,

who, often, are not empowered to negotiate safe sex. In addition, sexually active girls may be at greater risk of contracting STIs than boys for biological reasons.

Moreover, WHO (1995) reported that two thirds of the global annual estimate of 333 million curable STIs arise from developing countries. Most of these infections are believed to be concentrated in young people below the age of 25, with the largest rate occurring among the age group of 20-24, followed by the age group of 15-19 (Cates & McPheeters, 1997). While this might present a true picture of STIs in adolescents, Dehne and Riedner (2005) note that the estimates were based on a small number of surveys, and valid incidence and prevalence data for sexually active, unmarried adolescents from developing countries are still rare. Most of the available data on STIs prevalence are from Africa; little is known about the situation in Asia and Latin America, and virtually nothing about Eastern Europe (Dehne & Riedner, 2005).

Overall, girls seem to be more affected than boys, and adolescents in regular sexual partnerships and those in high-risk groups (sex workers and detainees) are more vulnerable than the general population of sexually active adolescents (de Schamphelaire, 1997). It is assumed that STIs may be more prevalent among adolescents in Africa and the Caribbean than in other groups as a result of higher numbers of sexually active people, but direct evidence of regional differences is scarce (Dehne & Riedner, 2005). They also suggest that STIs are common among sexually abused women and children, but there is no data on men.

In addition, Cates and McPheeters (1997) affirm that the most commonly reported STIs in adolescents are Chlamydia and gonorrhoea. In Nigeria and elsewhere, female adolescents accounted for the highest level of Chlamydia infection (detected by specimen culture) among all age groups, and prevalence was higher among younger adolescents than older ones (Behets et al., 1995; Brabin et al., 1995). Prevalence levels ranged from less than 10.0% among sexually active girls in rural areas of Uganda and Nigeria, to 10.0-20.0% among those in regular relationships (pregnant girls and those attending family planning clinics) and more than 40.0% among sex workers in Senegal. Females are particularly vulnerable to STIs/HIV, biologically, economically and socio-culturally, particularly in Africa. Although there is limited data on gonorrhoea prevalence, the rate documented in existing data was lower than for Chlamydia, and usually well

below 10.0%, excluding high schools in the USA and adolescent patients in Namibia (Brabin et al., 1995; Burstein et al., 1998; Osotimehin, Dare, & Ojengbede, 1994).

Furthermore, an estimated 11.8 million of about 1 billion young people in the world were said to be infected with HIV/AIDS as at the end of 2001 (UNICEF/UNAIDS/WHO, 2002). Sub-Saharan Africa bears the greatest burden of HIV infections among young people globally. About 73.0% of all young people (15-24 years) infected with HIV are living in sub-Saharan Africa (UNICEF/UNAIDS/WHO, 2002). South Asia, East Asia and the Pacific, and Latin America and the Caribbean accounted for 9.0%, 6.0% and 5.0% respectively in terms of the percentage of young people infected with HIV. Countries of the Central and Eastern Europe, Commonwealth of Independent States and the Baltic States (4.0%), industrialised countries (2.0%), and the Middle East and North Africa (1.0%) had the lowest HIV prevalence in young people.

Overall, more young women (7.3 million) than young men (4.5 million) are HIV-infected. In all the other regions of the world, more young men than women are infected with the virus, except in sub-Saharan Africa and South Asia (the two regions with the largest burdens), where two thirds of HIV-infected young people are women and girls. It was also estimated that more than two thirds of the new infections among the 15-19 year age group in sub-Saharan Africa are girls (UNICEF/UNAIDS/WHO, 2002).

Factors contributing to the spread of STIs, including HIV, among adolescents include their sexual behaviours (which are influenced by both individual and environmental factors, as discussed earlier); treatment-seeking behaviours; and unsuccessful preventative strategies.

Adolescents' treatment-seeking behaviour is influenced by the following factors:

- *Asymptomatic nature of STIs and HIV:* Most STIs in girls and many in boys remain asymptomatic until serious consequences emerge (Dehne & Riedner, 2005). More than two thirds of non-ulcerative STIs present with non-specific symptoms which sometimes are considered 'normal' by young people.

- *Lack of adolescent-friendly services:* Many adolescents do not seek treatment for symptoms of STIs at clinics because of health workers' disapproval of their sexual behaviour (Brabin, 2004; Temin et al., 1999).
- *Lack of confidentiality:* Adolescents are often scared to attend clinics because they do not want their parents and/or classmates to be aware of their health concerns (T.L. Cheng, Savageau, Sattler, & DeWitt, 1993; Temin et al., 1999), and this applies to the use of both school health clinics as well as public health services (Ferguson, 1998).
- *Financial constraints:* Many adolescents may want to use the services of private practitioners but often cannot afford them (Brabin, 2004; Temin et al., 1999). In a study by Brabin et al. (1995), only 2.8% of symptomatic girls sought any form of treatment, and this varies according to age. Older girls sought treatment more often than younger girls. The kind of treatment sought was often provided by patent medicine dealers (Brabin et al., 1995) or traditional healers, as reported in Nigeria (Temin et al., 1999), because such persons were able to offer them cheap and anonymous services. However, Brabin (2004) argues that such treatments may not be appropriate for their health problem, and may deter them from receiving much-needed preventative education.
- *Ignorance:* One of the greatest problems faced by adolescent girls is ignorance of symptoms of STIs (Brabin et al., 1995). Adolescents generally lack access to adequate and accurate information about STIs and HIV (Dehne & Riedner, 2005). Even when symptoms persist and they are sure they need medical help, they delay seeking treatment due to embarrassment and guilt.
- *Concerns about pregnancy:* Pregnant adolescents in developing countries often miss out on routine syphilis screening because they do not attend (or attend only late in pregnancy) antenatal clinics (Brabin, 2004). This often happens because they are trying to hide their pregnancies from parents or other adults around them who may disapprove of their sexual behaviour. Some do not report for antenatal care because they cannot afford.
- *Self-medication:* Many adolescents in countries where prescription drugs can be obtained over-the-counter would rather self-medicate than seek proper medical attention. This may be attributed to financial constraints, unfriendly health workers and embarrassment and guilt. A study in Nigeria revealed that adolescents self-medicate with antibiotics such as

tetracycline and chloramphenicol to treat STIs (Temin et al., 1999). In addition, they use herbs and roots, Krest Bitter lemon soda, kola and combinations of salt, potash, gin, lime and pepper fruit to treat STIs. All of these have no proven efficacy in treating their ailments, and they can build antibiotic resistance and incur side-effects from using such products.

Unsuccessful preventative strategies have also been implicated in the spread of STIs among adolescents. Studies have shown that inadequate and inaccurate information about STIs is common in adolescents and that, even when the adolescent is knowledgeable, it does not always translate into the adoption of healthy behaviours (Lema, 1990; Odujinrin & Akinkuade, 1991). Brabin (2004) points out that lack of access to condoms and inconsistent condom use exposes sexually active adolescent to STIs, including HIV.

It has been established from the aforementioned that adolescents do engage in risky sexual behaviours that put them at risk of contracting STIs, including HIV. Looking at the interconnectedness of STIs and HIV, one should not be surprised by the high prevalence of HIV infection in this group. An adolescent who has contracted a STI and does not seek treatment early enough is therefore at a greater risk of HIV infection.

2.5 Programmes and their effectiveness in promoting safer sexual behaviours

For now, in the absence of a cure for HIV, the only option is to maximise preventative efforts. Although antiretroviral drugs are effective in slowing down the progression of the infection, they are not affordable for most infected people. This is particularly so in resource-poor regions and countries in sub-Saharan Africa. On the other hand, prevention strategies have been shown to work.

D. Webb (1997) argues that the effectiveness of HIV prevention programmes requires a dual concept involving environmental issues that affect sexual behaviour, as well as the behavioural motivations of individuals. The former consist of socio-economic factors such as poverty and

migrant labour. These are macro processes which are beyond the scope of any HIV prevention programmes. Hence, intervention efforts have to be directed at contextual factors which may have local application and relevance.

More importantly, prevention of HIV infection requires people to be capable of motivating themselves and their behaviour, not just being knowledgeable about the infection. Generally, social responses to the HIV scourge have led to information-based interventions focusing on the transmission routes of HIV and how to safeguard against infection (Aggleton, Chase, Rivers, & Tyrer, 2000; Bandura, 1992; Cohen & Trussell, 1996; D. Webb, 1997). However, merely providing information and/or education has proven to be insufficient in changing refractory health-impairing behaviour (Aggleton et al., 2000; Cohen & Trussell, 1996). In addition, there is the need to equip people with resources and social support so that they can change their risky sexual behaviours. According to Bandura (1992), effective self-regulation of behaviour requires skills in self-motivation and self-guidance, as well as a strong belief in one's efficacy to exert personal control. On the other hand, D. Webb (1997) points out that these factors also have varying determinants that make knowledge-behaviour change inconsistent and socio-geographically specific.

To date, several attempts have been made to prevent HIV infection in sub-Saharan Africa. However, such efforts have had little success: HIV prevalence rates are still high and the world's largest burden of infection is in this region. Successful interventions have thus far been limited to small-scale programmes targeting specific groups in specific geographic locations (Cohen & Trussell, 1996; D. Webb, 1997); it is also difficult to evaluate such programmes (Cohen & Trussell, 1996).

Moreover, Cohen and Trussell (1996) maintain that some of the interventions are still information-based and messages do not address specific sexual behaviours. Consequently, a knowledge-behaviour gap is evident in African populations. The level of awareness and knowledge of HIV is relatively high but this does not bring about behaviour change (Abdool Karim, 2001; Wouhabe, 2007). The need to further equip people to adopt safe sex behaviours is thus urgent, and programmes can only bring about behaviour change when they combine education with self-efficacy and skills training. Furthermore, in Africa and elsewhere, little or no

impact has been made on people's perception of the risk of HIV infection (Abdool Karim, 2001; Campsmith et al., 1997; Owolabi et al., 2005; Sahlu et al., 1999). Risk perception is an important component of self-motivation and thus behaviour change.

Cohen and Trussell (1996) suggest that for programmes to be effective, they must also be culturally appropriate and locally relevant, reflecting the social context within which they are embedded. They further stress that such interventions should be designed with several elements in mind: a good knowledge of the target population, the types of behaviours to be changed, and likely obstacles to behaviour change in the environment. Other areas of interest to be considered by such interventions include promotion of lower-risk behaviours, assistance in development of risk-reduction skills, and promotion of changes in societal norms.

2.5.1 Programmes' effectiveness in promoting safer sexual behaviours among adolescents

Adolescents constitute one of the high-risk groups as far as HIV infection is concerned. However, because they are more likely than adults to adopt and maintain safer behaviour, this group is also key to halting the HIV/AIDS pandemic (UNICEF/UNAIDS/WHO, 2002). This can only be achieved by designing effective interventions targeted at adolescents of all categories, and meeting their risk-reduction needs by using a multi-disciplinary approach.

Studies have consistently proven that HIV knowledge does not translate into safer sexual behaviours in adolescents (Agius, Dyson, Pitts, Mitchell, & Smith, 2006; Martiniuk, O'Connor, & King, 2003; Olayinka & Osho, 1997). Therefore, interventions have to go beyond merely providing information to adolescents, and should rather teach them the skills to negotiate and adopt safer sexual behaviours, as well as increase their self-efficacy.

Meanwhile, many stakeholders in Africa and elsewhere are apprehensive about providing adolescents with comprehensive sexuality education because they fear it will make them more promiscuous, and thus advocate an abstinence-only education (AOE) approach (Brocato, 2005), as is being promoted by the US government. However, US medical professional organisations oppose the idea of the AOE approach on ethical grounds, namely that it deliberately withholds or

distorts potentially life-saving information about contraception use and STI prevention (Santelli et al., 2006a, 2006b). However, the organisations support comprehensive sexuality education that includes information about abstinence and accurate information about contraception, human sexuality and STIs.

Brocato (2005) states that comprehensive sexuality education programmes are made up of age-appropriate, medically accurate information on a broad set of topics related to sexuality, including human development, reproductive health, relationships, body image, gender roles, abstinence, contraception, and STIs, including HIV/AIDS. They also teach skills necessary for communication, decision-making and negotiation, as well as provide information. In addition, these programmes promote gender equality, self-esteem building and respecting the rights of others.

Findings of a recent review of AOE and comprehensive sexuality education programmes designed to promote abstinence from sexual intercourse concluded that the latter demonstrates efficacy in delaying initiation of intercourse as well as promotes other protective behaviours such as condom use (D.B. Kirby, Laris, & Rolleri, 2007). The review found no evidence that AOE programmes demonstrate efficacy in delaying sexual initiation. In another study on comprehensive sexuality education, Dilorio, Resnicow, McCarty, De, Dudley, Wang, and Denzmore (2006) reported no difference among the study and control groups in terms of abstinence rates, but there were increases in HIV knowledge and condom use in the study groups.

In contrast, a study in the US involving seventh graders found that an AOE programme was effective in delaying sexual initiation (Weed, Ericksen, Lewis, Grant, & Wibberly, 2008). Similarly, a longitudinal study of adolescents (12-16 years) revealed that a private pledge not to have sex until one is older reduced the likelihood of engaging in sexual intercourse and oral sex, while there was no association between a formal pledge and sexual behaviour (Bersamin, Walker, Waiters, Fisher, & Grube, 2005).

Comprehensive sexuality education programmes have been shown to be more effective in either delaying sexual debut or promoting safe sex in younger adolescents than in older sexually active

adolescents (Maticka-Tyndale, Wildish, & Gichuru, 2007a; Rusakaniko et al., 1997; Siegel, Aten, & Enaharo, 2001). This is an indication for that sexuality education should be introduced early in adolescence, before the onset of risky behaviours. In that way, adolescents' sexual debut could be delayed, and they could also be equipped to practise safe sex.

According to D. Kirby et al. (1994), characteristics of effective school-based sexual health interventions include:

- Having clear and specific outcome behaviours
- Using social learning theories as theoretical approaches for programme development
- Involving students in experiential activities to personalise relevant basic information
- Addressing social or media influences on sexual behaviours
- Designing their content to reinforce group-specific values and norms
- Providing opportunities to model and practise communication and negotiation skills

A current review of school-based sexual health interventions in SSA revealed that such interventions were most effective in changing knowledge, followed by attitudes (Paul-Ebhohimhen, Poobalan, & van Teijlingen, 2008). Behavioural intentions were next, whereas the least significant changes were in actual behaviour. The study also found that:

Behavioural change in relation to abstinence was easier to effect among baseline virgins, while condom use appeared to be the more practicable sexual risk protective behaviour for adolescents who are already sexually active.

In addition, the authors emphasise that future interventions must take into account the duration of the study and monitor the progress of interventions, as well as address the following aspects:

- Socio-economic status and religious affiliation to ensure better programme generalisability to other settings
- Programmes should be conducted during school hours to allow opportunity for interactions between researchers and stakeholders

- Facilitators should be trained to deal with the particular sexual health intervention under evaluation instead of relying on their knowledge and perception of the same in order to effectively conduct the intervention and its monitoring
- Studies should be based on both theoretical and research-based evidence from systematic reviews, qualitative studies and discrete choice experiments to allow for appropriate evaluation
- Tactical communication of the goals of an intervention to stakeholders helps to ensure smooth delivery of interventions. For example, portraying an intervention as ‘a means of preventing STIs and HIV/AIDS’ rather than as ‘providing sex education’
- Use of factorial designs to vary different programme components could highlight the strengths and weaknesses associated with using different media and facilitators in intervention design and delivery
- Greater effectiveness is associated with using skills-based content in interventions, namely involving active participation of students and more lengthy interventions and offering the opportunity for repeated exposure to the same theme
- Studies should be designed to report long-term (\geq one year) outcomes in order to reduce limitations in the long-term evidence regarding their effectiveness in preventing STI/HIV in SSA and to determine whether certain outcomes routinely demonstrate a delayed effect (i.e. a statistically significant outcome having not yet been reached)
- Conducting more focused (e.g. limiting the types of schools, content of intervention and outcomes measured) interventions could be more informative in terms of drawing associations between both the internal and external validity of a study
- Sub-analysis of outcomes based on pre-intervention sexual history helps in the development of group-specific interventions

2.5.2 Programmes' effectiveness in promoting safer sexual behaviours among adolescents with disability

People with disability have almost been forgotten in the fight against HIV/AIDS. Intervention studies targeting PWD, particularly adolescents are sparse. Little is known about the relationship between HIV/AIDS and persons with pre-existing disability, and the available data are mainly exploratory and descriptive in nature. However, the basic principles and guidelines for standard sexuality and HIV/AIDS education for adolescents, as outlined above, can also be adapted for adolescents with disability. In addition, few studies have demonstrated the effectiveness of peer education among in-school deaf in Nigeria and video AIDS prevention training in persons with mild/moderate intellectual disability (Osoyole & Oladepo, 2000; Samowitz et al., 1989).

Furthermore, provision of HIV prevention education to individuals with intellectual disability is more challenging than educating other PWD because cognitive impairments are likely to lead to unsafe sexual practices unless safe sex is repeatedly reinforced (Health and Disability Working Group, 2002). The need to provide concrete examples, use anatomically correct models and simple, unambiguous words has also been emphasised.

Moreover, sex education programmes for PWID should provide skills in the interpersonal domain in addition to sexuality information because these people have been found to lack knowledge about sex and intimacy (McCabe, Cummins, & Reid, 1994). Such programmes should also provide skills on how to recognise sexual abuse (Duke, 2006).

Di Giulio (2003) argues that persons with physical disability who are fully included in mainstream education can benefit from the standard sexuality and HIV education, and such opportunity provides them an added benefit of affirming their status as full sexual beings. However, Di Giulio (2003) adds that in order for sexuality education for youth with disability to be comprehensive, such education must in addition to the standard information and skills include information and skills relevant to their specific disability. She states:

This would include but not limited to, addressing issues about how a particular disability may impact on sexual function, the suitability of particular contraceptive methods for people with different disabilities, and prevention of sexual exploitation and abuse.

Furthermore, Groce (2004b) proposes a general guideline for designing interventions for PWD as follows:

- TYPE I: PWD being reached with HIV/AIDS messages as members of the general population with little or no additional adaptation or expense
- TYPE II: Adapting HIV/AIDS outreach campaigns to ensure inclusion of PWD as members of the general population, with low to moderate additional expense
- TYPE III: Making disability-specific adaptations to existing materials and developing new materials to reach individuals with disability outside the bounds of the general population, targeting harder-to-reach individuals and populations. This involves moderate to high cost

2.5.3 Effective sexuality education for people with intellectual disability

Human sexual rights and health is receiving increased attention the world over, particularly in the face of the HIV/AIDS pandemic. Sexuality of adolescents and young adults is therefore a major component of the HIV response in all nations. Although this is slow for those with disability, the issue of their sexuality is now being focused on as societal attitudes towards their sexuality are improving (Di Giulio, 2003). As such, parents, educators, caregivers and health professionals in the developed world are increasingly recognising the rights of PWD to sexuality education and sexual health services.

Contrary to parents' and caregivers' fear that sexuality education will make persons with intellectual disability more promiscuous (Heyman & Huckle, 1995). Craft and Craft (1983) affirm that sexuality education is necessary for preventing unwanted pregnancies and STIs, and for fostering adherence to societal standards of behaviour. Furthermore, individuals with

intellectual impairment are disproportionately at risk of sexual abuse, which can partially be traced to lack of sexuality education (Sobsey & Varnhagen, 1988).

Commitments on the part of stakeholders are therefore necessary to break the barriers and obstacles experienced by PWD in realising their rights to sexual health (Di Giulio, 2003). Parents, teachers, caregivers and health professionals could advocate and assist persons with intellectual impairment to self-advocate their sexual rights. These stakeholders could also equip themselves with necessary knowledge and skills to provide sexuality education to this group of individuals.

Di Giulio (2003) emphasises the importance of the principles of access and comprehensiveness when planning sexuality education for young people with intellectual disability. She recommends that they must be provided with sexuality education in appropriate formats, as the standard sexuality education does not align with their learning styles or level of understanding. Di Giulio (2003) clarifies further that in order to be comprehensive, sexuality education for youth with intellectual disability, besides incorporating the basic information and skills required by all young people, must emphasise social skills and relationship training. In addition, skills must be taught that ensure personal safety against sexual exploitation and abuse, including how to clearly distinguish between inappropriate and appropriate behaviour, how to clearly and effectively say no to unwanted sexual advances or activities and how to report abusive behaviours.

Conversely, traditional sexuality education has been criticised in that its primary aim is to increase knowledge related to sexual functioning and it does not provide evaluation and further support. Lumley and Scotti (2001) identify the failure to ensure that participants acquire and maintain the target information and minimal support for the sexuality of PWID as drawbacks of traditional sexuality education. They recommend tailoring instruction to address individual needs (e.g. deviant sexual behaviour) and to incorporate knowledge and skills into a person's life (e.g. in addition to knowing that using condoms prevents pregnancy and STIs, knowing how and where to obtain them). The authors assert that adequate support, as recommended, is pertinent to fully supporting the sexual expression of persons with intellectual impairment.

In proposing the level of support described above, Lumley and Scotti (2001) acknowledge its impossibility without administrative approval with respect to clients in a supervised residential setting. They suggest that lack of administrative support for the promotion of healthy sexual expression has limited traditional support to educational programmes only. Thus, system-level changes will be needed so as to implement a meaningful form of sexuality education. Such changes will include the following:

Person-centred approach: The implementation of an individualised programme approach requires continuous long-term planning and support that involves a team of persons who are closely involved with the target individuals, including family and formal care providers (Lumley & Scotti, 2001). The team should include a psychologist, nurse, social worker, sexuality educator, relevant staff, and a coordinating supervisor trained in sexuality (Ames, 1991). Lumley and Scotti (2001) suggest that where agencies lack the resources to hire a full-time sexuality educator, an alternative may be to mandate sexuality training for those wishing to become a qualified intellectual disability professional, and the trained individual would then take primary responsibility in leading the team. The team approach ensures that the different areas of expertise, both professionally and in terms of familiarity with the target individual, are represented, and active support is provided to the client to ensure the latter achieves specific objectives and goals that have been developed (Lumley & Scotti, 2001).

Lumley and Scotti (2001) outline the advantages of the person-centred approach as follows:

- As it is tailored to an individual, it considers factors such as the degree of intellectual impairment, presence of physical disability, existing skills and deficits, and individual goals when conceptualising any programme
- It increases the likelihood that the developed programmes will meet the person's needs by involving persons who work closely with the individual
- With set goals, a team approach increases the chance that specific objectives will be achieved
- Implementation of a person-centred, team approach is capable of remedying the limitations of the traditional approach

Individualised assessment process: Individualised assessment to provide baseline information for evaluation and to gather information necessary for developing an individualised programme should be undertaken before initiating a sexuality education programme (Huntley & Benner, 1993). According to Lumley and Scotti (2001):

Team members could provide information on relationship history and future goals, appropriate and inappropriate sexual behaviours, and behavioural excesses and deficits in relevant skill areas (e.g. social skills, assertion), all of which are important areas to address in a comprehensive programme.

Functional assessment is a process used to gather information regarding an individual's repertoire of behaviours, and it yields five primary outcomes: (a) a clear description of the focus behaviour; (b) identification of behaviour antecedents, including times and events that trigger behaviour or, otherwise, (c) the consequences that maintain a behaviour; (d) hypotheses that describe the relationship between a behaviour and antecedent and consequent events; and (e) empirical data to support hypotheses (O'Neill et al., 1997). This type of assessment can be conducted to determine variables that maintain the current behaviours and to plan for teaching skills that would help the individual achieve specific goals (Lumley & Scotti, 2001). To aid the assessment of individual behaviour and needs, Lumley and Scotti (2001) recommend having a framework that provides standards for sexual behaviour.

The authors suggest that, basically, areas of assessment must cover: sexuality knowledge; behavioural skills; and areas of concern such as socially inappropriate (e.g. public masturbation) or deviant (e.g. exposing oneself to a child) behaviours. In addition, sexual orientation; birth control, especially for women; and prevention skills for sexual abuse and STIs, including HIV, need to be covered. It is only after establishing the needs that efforts geared towards increasing knowledge and training skills can start.

Group instruction has been proven to be effective in increasing knowledge of sexuality and STIs/HIV (Blanchett & Wolfe, 2002; Jacobs, Samowitz, Levy, & Levy, 1989; Lumley & Scotti, 2001). The use of audio-visual aids could enhance learning, as seen in Johns' manual (2007). However, those with severe intellectual disability may not achieve the same gains with audio-

visual aids, and this stresses the importance of pre-post evaluation so that such individuals can be identified and given remedial instruction. Alternatively, persons of the same level of intellectual functioning could be grouped together for sexuality education (Newens & McEwan, 1995). However, this does not undermine the importance of pre-post evaluation in that those who still do not gain from being part of same-level intellectual functioning groups, due to internal group heterogeneity, could be targeted for remedial instruction (Lumley & Scotti, 2001; Newens & McEwan, 1995).

In addition, information should be as simple as possible, as pointed out by Hingsburger (1990) and E.J. Brown and Jemmot (2002), and excessively high standards and too much information could lead to sensory overload for PWD. They suggest that the focus should be on teaching the person what they need to know to function at a desired level of sexuality and without endangering themselves or others, or engaging in socially inappropriate behaviours. Moreover, participants must be made comfortable to discuss sexual matters, and educators must be non-judgemental (Blanchett & Wolfe, 2002; Jacobs et al., 1989).

The main goal of imparting knowledge is to inspire behaviour change, but behaviour change typically is not affected solely through acquiring knowledge (Jacobs et al., 1989). After assessing an individual's level of needs, behavioural skills training (BST) made up of instruction, modelling, rehearsal, praise, and corrective feedback can be used to teach specific skills (Lumley & Scotti, 2001). Behavioural skills training (BST) has been effectively used with individuals with intellectual disability to teach a variety of skills, including assertion and social skills, in Africa and elsewhere (Bramston & Spence, 1985; Johns, 2007; Warzak & Page, 1990). Again, use of audio-visual training aids was very helpful (Johns, 2007; Samowitz et al., 1989).

Though it is important to adopt a person-centred approach to sexuality education for PWID, in many African countries lack of human resources and political will may hinder it. However, with or without political will, Africa could adapt programmes that work with available resources. The few researchers in the field, teachers, psychologists and health workers could play a great role if trained to provide such education.

Moreover, a systematic review of sexuality and HIV/AIDS education curricula by Blanchett and Wolfe (2002) identified the following as attributes of an effective intervention programme:

1. Measurable goals and objectives: must provide direction for implementation and evaluation, and are better stated in an effective domain if they are to measure behaviours or skills e.g. 'learners will describe their feelings regarding rejection by the opposite sex'
2. Scope and sequence: must ensure that information is logically introduced and in a cumulative manner, and is flexible enough to accommodate any necessary adaptations; delineates prerequisite skills for learning; and assesses previous knowledge regarding misconceptions, fears and concerns
3. Content and concepts: must include biological and reproductive terms and concepts; health and hygiene, including STIs and HIV/AIDS; relationships; and assertive and self-advocacy skills
4. Instructional methods: must comprise explicit and life-like instructional media to promote understanding and application to real-life situations; effective instructional strategies (e.g. role-playing to teach skills, direct instruction and discussions); self-protection skills (e.g. how to assess, recognise and avoid sexual exploitation and abuse); and an in-built evaluation process to monitor progress during each lesson
5. Curriculum development and evaluation: must include field testing and validation, user feedback and systematic revision based on such evaluation; teacher training and parental involvement/training; possible collaborations between stakeholders; appropriate presentation and format; recognition of diversity (e.g. sex roles, disability heterogeneity, culture and values); and reference aids specification (e.g. relevant organisations for support)
6. Adaptations: must allow flexibility in modifying instructions, materials and students' progress evaluation

2.5.4 School-based sexuality education for adolescents in Nigeria

In Nigeria, a national task force developed guidelines for comprehensive sexuality education based on the Sexuality Information and Education Council (SIECUS) model of starting early skills development for adolescents, teacher training and community involvement (Finger, 2000). This was orchestrated through a collaborative effort involving the Action Health International (AHI), key non-governmental organisations working in the area of reproductive health, and the Nigerian government. Following the introduction of the guidelines to the Nigerian public in 1996, more than 100 organisations have endorsed and integrated them into their programmes (Brocato, 2005).

A non-governmental organisation (NGO), the Association for Reproductive and Family Health (ARFH), in Ibadan Oyo State, in collaboration with the state government, first developed a curriculum based on SIECUS guidelines that was implemented in 26 secondary schools and for ten – 18-year-olds. Between 1999 and 2003, the Department for International Development (DFID) also implemented Life Planning Education (LPE) in 131 secondary schools in Oyo State. The project focused on human development, relationships, sexuality, family life and personal skills development.

Moreover, the Nigerian government approved a national comprehensive sexuality education curriculum, entitled the Family Life and HIV Education (FLHE), a few years after the SIECUS guidelines were introduced. This is to be integrated into all levels of education, from primary to tertiary (Brocato, 2005). While a few states have started to implement it, many cannot due to financial constraints. However, the former's implementation of FLHE is not always adequate, and the programmes are only active in those schools supported by NGOs.

However, in December 2007, the federal government announced the inclusion of FLHE into the curricula of two subjects – Social Studies and Integrated/Basic Science – being offered in Nigerian secondary schools (Isa, 2007, December 16). The Nigerian Educational Research and Development Council (NERDC) (2003) defines FLHE as:

A planned process of education that fosters the acquisition of factual information, formation of positive attitudes, beliefs and values as well as development of skills to cope with the biological, psychological, socio-cultural and spiritual aspects of human living.

From this definition, one sees that the scope extends beyond sexual intercourse and rather approaches sexuality as being an integral part of being human. This is in harmony with the WHO definition of sexuality. Its emphasis on socio-cultural and spiritual aspects of life makes it applicable to the Nigerian society's diverse cultures and religions. In addition, if well communicated to different stakeholders, its implementation may achieve great success.

The curriculum is organised around six themes, each of which covers age-appropriate knowledge, attitudes and necessary skills:

- i. Human development
- ii. Personal skills
- iii. Sexual health
- iv. Relationships
- v. Sexual behaviour
- vi. Society and culture

According to NERDC (2003), it is designed to be learner-oriented, with each theme's content building from the preceding one so that the content is rich. Its thematic approach makes it robust and avoids unnecessarily overloading the school curriculum. Its structure is expected to achieve intended learning outcomes through comprehensive coverage of the listed topics.

Though the curriculum is intended to cover from primary to tertiary levels of education, only the junior secondary part is currently being implemented across the country. Furthermore, the only prevention for STIs and HIV offered by the curriculum under its 'sexual health' theme is sexual abstinence. Therefore, it lacks comprehensiveness because it offers minimal options for prevention of STIs/HIV and neglects the needs of learners who are already sexually active. Available data (national and local) show that high proportions of adolescents are sexually experienced/active (National Population Commission (NPC) [Nigeria] & ORC Macro, 2003;

Nwaorgu et al., 2009; Orji & Esimai, 2005; Slap et al., 2003), while a sizeable proportion intend to initiate sex in the near future (Nwaorgu et al., 2009). The implication is that the curriculum does not cater for these groups of students.

Moreover, the curriculum does not cover students in primary and senior secondary schools. Many of them, however, are adolescents. In addition, the fact that it does not cover primary schools excludes a lot of adolescents with disability (particularly those with intellectual disability), who may not achieve beyond a primary level of education. The curriculum also fails to offer any disability-specific coverage for adolescents with disability who are included in mainstream education.

2.6 Overview of HIV/AIDS

The world is yet to see the end of the HIV/AIDS pandemic. Although some progress has been made in stabilising the pandemic, the annual incidence of new infections, the increased lifespan of HIV-infected persons due to HIV treatment and the gap between AIDS deaths and new infections have caused the overall number of people infected with HIV to steadily increase (UNAIDS, 2008). According to the same report, in 2007 an estimated 2 million out of the 33 million people infected with HIV died thereof, while another 2.7 million new infections occurred.

There is evidence of increased new HIV infection occurring in populous countries in regions like Indonesia, the Russian Federation and some high-income countries, but SSA retains its status as the epicentre of HIV infection as it accounts for 67.0% of the global burden of infection (UNAIDS, 2008). Southern Africa in particular is disproportionately affected by the scourge, accounting for 35.0% of HIV infections and 38.0% of AIDS deaths globally. As a result, most of the indicators of the HIV/AIDS pandemic have their highest values in SSA. There is therefore no doubt that the impact of the scourge is felt most strongly in SSA and it has posed a major threat to development in the region.

The reports of UNAIDS (2008) posit that women, children and young people represent the broad categories of the worst affected persons worldwide. In 2007, women accounted for 50.0% of the global infection and almost 60.0% in SSA. This group was closely followed by young people (15-24), who accounted for an estimated 45.0% of new infections globally in 2007. In addition, about 73.0% of young people (15-24) infected with HIV live in sub-Saharan Africa (UNICEF/UNAIDS/WHO, 2002). The report further estimates that more than two thirds of new infections among the 15-19 age group in this region are girls. Furthermore, in 2007 nearly 90.0% of the estimated 2 million children below age 15 infected with HIV, including the 370,000 new infections, were from SSA (UNAIDS, 2008). Thus, adolescents (10-19) constitute an important group to be targeted in SSA's HIV response.

Although heterosexual intercourse is the main factor fuelling the spread of HIV in SSA (UNAIDS, 2008), one should not overlook the roles of other factors. Such factors have been documented and vary within sub-regions; for example: sex work has been identified in West Africa and southern Africa; injecting drugs in East and southern Africa, including Mauritius; and sex between men, which is often underestimated in the SSA epidemic.

2.6.1 HIV/AIDS in Nigeria

The first case of HIV infection in Nigeria was identified in 1986 (Pennington, 2007). In 2003, Nigeria was declared one of the 14 most HIV-afflicted countries in the world (The White House, 2003), and as home to the largest epidemic in West Africa (UNAIDS, 2008). The epidemic is now stable at 3.1% (2.3-3.8%) prevalence (Federal Ministry of Health Nigeria, 2006). However, there is cause for concern because UNAIDS (2008) suggests the non-representativeness of sentinel data on which the prevalence is based, and hence non-reliability of such data in estimating national HIV prevalence. Moreover, the current prevalence is still highly significant with an estimated 140 million people living in Nigeria. It is not surprising then that UNAIDS/WHO (2006) ranked Nigeria third globally in respect of having the highest HIV/AIDS rates, after India and South Africa.

The HIV/AIDS burden among the Nigerian youth follows the same trend generally found in SSA with adolescent girls at a very high risk. Over 60.0% of Nigerians are youths, 44.0% of which are 15 years old and younger (UNDP, 2004). The same report affirms that the age of sexual debut for 25.0% of these youths is 15 years, while 50.0% initiate sex at the age of 18 years. This group is no doubt highly vulnerable. Additionally, it is estimated that 60.0% of all new infections in Nigeria occur in young people between the age of 15 and 25 (Pennington, 2007).

The UNDP (2004) argues that HIV affects all indices of human development – the ability to lead a long and healthy life; possessing knowledge required to lead a happy and productive life; and having access to resources that will enable a decent standard of living. It also predicts that if the epidemic in Nigeria continues unabated, the implications for human development are going to be devastating. These include:

- Changes in the population structure as a result of high morbidity and mortality of young people (15-29), which will leave the country with a less dynamic and vibrant population
- Less productivity, with a dwindling economy as a direct result of the above
- An increase in the number of child-headed households due to an increased adult mortality rate
- A breakdown of the social safety nets provided by the extended family system due to the increasing numbers of orphans and care needed by infected family members
- Poverty at all levels – individual, community and national
- Reductions in school enrolment and adult literacy levels, as well as a low quality of education
- A possible decline in GDP
- Food insecurity

In Nigeria, it has been documented that 80.0% of HIV infections occur through heterosexual transmission while the rest are accounted for by blood transfusion and mother-child transmission (Pennington, 2007; UNDP, 2004). The UNDP (2004) has also established documented evidence, albeit not comprehensive, of homosexuality and lesbianism in settings such as prisons, male or

female dominated groups and professions, and some urban settings. In addition, most members of these groups of homosexuals and lesbians in Nigeria are also bisexual.

According to the UNDP (2004), the major socio-economic and cultural factors contributing to the spread of HIV in Nigeria are its social structure, modernisation, urbanisation and poverty. It argues that Nigeria's patriarchal family system assigns a dominant role to men, and women are only to be seen but not heard. Women's subordinate role in a typical Nigerian setting makes it very difficult for them to negotiate safe sex with their partners. To worsen matters, a double standard exists that frowns at married women having extramarital affairs but permits men to do so. Nigerian women therefore have no control over their sex lives or those of their husbands. In addition, Lau and Muula (2004) argue that rapid modernisation and urbanisation has resulted in migration from rural to urban areas, where people are not under the traditional and cultural sanctions and hence a loss of traditional and cultural values occurs. This, they note, has led to multiple sexual partnerships.

Specifically, factors contributing to HIV spread in Nigeria include (Ogunbodede, 2004; Pennington, 2007; UNDP, 2004):

- Poverty, which has eaten deep into the country's economy. It is both the cause and the consequence of HIV infection. The poor are more vulnerable to the infection because they lack the financial power and resources to live decently. After contracting the infection, it further impoverishes them. Poverty could also increase the rate of migration to urban areas, resulting in a loss of traditional and cultural values, overcrowding, child labour and sexual coercion, all of which are determinants of HIV infection
- Commercial sex work as a means of making money in urban areas
- Low literacy levels, especially among females. Education affects the level and quality of safe sex information a person has access to. It has been documented that persons with high literacy levels practise safe sex than their counterparts who are illiterate. Lack of accurate sex information also leads to misconceptions about sex and HIV, with the result being increased transmission rates and stigma and discrimination against people infected with HIV/AIDS

- Cultural practices that permit men to have multiple sexual partners, such as polygamy, concubinage, wife hospitality, and wife inheritance
- The erroneous belief of virgin-cleansing. It is believed that having sex with females with disability and young girls, who are most likely to be virgins, can cure HIV and other STIs. This is the reason for some cases of rape among these groups of females
- A poor or weak healthcare system due to political instability and mismanaged economy has made it difficult to provide enough services for prompt diagnosis and treatment of STIs; HIV counselling, testing, prevention; and lack of antiretrovirals. Prescription drugs can easily be obtained without prescriptions, leading to self-medication and sub-optimal treatment of STIs
- Poor community support for HIV/AIDS prevention programmes and condom use
- Harmful traditional practices such as female genital mutilation, scarification and tribal marks

2.6.2 Challenges of measuring adolescents' sexual behaviours and HIV-related knowledge, attitudes and practices

Four challenges are evident in literature regarding measuring adolescents' sexual behaviours and HIV-related knowledge, attitudes and practices. They are:

- The use of self-reporting measures which are subject to social desirability response bias when dealing with sensitive topics like sexual behaviours (Adebayo et al., 2006; Dilorio, McCarty, Resnicow, Lehr & Denzmore, 2007; Taylor et al., 2007). Social desirability response bias refers to respondents' tendency to agree with statements associated with healthy behaviours or attitudes and to disagree with statements associated with unhealthy behaviours and attitudes (Donenberg et al., 2003), thereby under-reporting their sexual activities. It is possible for adolescents to report what they think are the appropriate or acceptable behaviours and attitudes when this does not relate to them. This can be checked by using multiple methods (involving both quantitative and qualitative methods) to gather information from them on the same topic and by obtaining information about

their sexual behaviours from independent sources who are in a position to have a good idea about the respondents' sexual behaviours. It is also better to try to use self-administered questionnaires to obtain information on sexual behaviours so that respondents can be more honest in their responses, unless the literacy level of the target population is not good.

- Often, recall bias is present, whereby some of the reports may not be completely accurate because respondents cannot fully remember exactly what happened due to a considerable time lapse (Donenberg et al., 2003). This is particularly so for questions meant to elicit information about sexual practices 3, 6, or 12 months prior to the study.
- Cross-sectional design is often used. This is correlational in nature, and it is difficult to establish cause-and-effect relationships (Donenberg et al., 2003; Taylor et al., 2007). Therefore, there are fewer interpretations of data obtained from such surveys.
- In an African setting, reporting bias is a possibility, whereby females under-report and males over-report. This is as a result of mores and norms that regulate sexual activities and which expect females to be chaste and to show deference to men and men to be virile and to initiate sex (Kaaya et al., 2002).

2.6.2.1 HIV/AIDS knowledge and attitudes among adolescents in Nigeria

Awareness of HIV/AIDS: Data from NDHS (2003) shows that awareness of HIV/AIDS is higher among 15-19-year-old boys (92.9%) than girls (82.8%). The level of awareness increases with education, and it is universal (100.0%) among both males and females with higher education. In addition, people in the urban areas are more aware of HIV/AIDS than those in the rural areas. However, among urban in-school adolescents, awareness of HIV/AIDS appears to be universal (100.0%) (James et al., 2006) compared to what it was about a decade ago (90.0%) (O.I. Fawole et al., 1999).

Knowledge of modes of transmission of HIV: Knowledge of modes of transmission of HIV is low among adolescents in secondary schools in Nigeria. For example, O.I. Fawole et al. (1999) documented that sexual intercourse was the mode of transmission that most (83.3%) of the

students were aware of, followed by blood transfusion (78.4%), using unsterilised instruments and equipment (56.9%) and sharing needles and syringes (59.3%). The study also indicated that adolescents' knowledge scores on HIV issues increased with age and educational level. Similarly, respondents in another study could only identify sexual intercourse, blood transfusion and sharing of needles as the modes of transmitting HIV, and they demonstrated inaccurate knowledge about HIV (Nwokocha & Nwakoby, 2002).

Knowledge of mother-to-child transmission (MTCT): Less than half of the 15-19 years age group knew that HIV can be transmitted through breastfeeding (National Population Commission (NPC) [Nigeria] & ORC Macro, 2003). Interestingly, more boys (44.6%) than girls (40.8%) had this knowledge. The level of knowledge of mother-to-child transmission through breastfeeding increased with the level of education, and is highest in people with higher education. In addition, those in the urban areas possessed more knowledge than those in the rural areas. Moreover, the knowledge of trans-placental transmission of HIV, either in-utero or during labour, among in-school adolescents was low. O.I. Fawole et al. (1999) revealed that less than half (47.1%) of the participants in their study were aware of trans-placental transmission of HIV.

Attitudes and risk perception towards HIV: Furthermore, adolescents demonstrate negative attitudes towards HIV and people living with HIV (PLWHA). The study by O.I. Fawole et al. (1999) showed that only 54.9% of the participants felt AIDS was a problem in Nigeria. Over a quarter (29.8%) attributed it to a curse from God and another 15.2% believed it was due to witches and wizards. Linking HIV infection to a curse from God could make them stigmatise or discriminate against PLWHA. So it is not surprising that most (70.7%) of the sample do not want to be near PLWHA. About half (49.5%) of the participants in a study by Nwokocha and Nwakoby (2002) would eat with a friend who is infected with HIV. Additionally, over two thirds (68.4%) of the respondents believed that they could never be infected with HIV, showing their low level of HIV risk perception despite their documented risky sexual practices.

2.7 Disability and HIV/AIDS

Globally, there are various programmes targeted at different populations to stem the spread of HIV. However, the population of PWD has, until recently, been systematically denied HIV/AIDS information despite their equal and ever-increasing exposure to HIV. Groce (2003) reports that this group of people are often assumed to be less at risk of HIV infection due to erroneous beliefs that they are sexually inactive, unlikely to use drugs/alcohol, and at less risk of being raped than their able-bodied counterparts. Thus, individuals with disability are rarely targeted by research and interventions that address HIV/AIDS.

The major risk factors for HIV infection are also associated with disability (Groce, 2004b). These include poverty, lack of access to education and healthcare services, sexual exploitation and rape, lack of HIV and sexuality information, low knowledge of HIV/AIDS, discrimination and isolation (Groce, 2003, 2004b; Groce & Trasi, 2004; Mulindwa, 2003). It has been documented that adolescents and women with disabilities are more vulnerable to HIV infection than their non-disabled counterparts (Choruma, 2007; Groce, 2004a; Yousafzai, Dlamini, Groce, & Wirz, 2004). The inclusion of PWD in the global efforts to control the spread of HIV is an urgent need if such efforts are to be fruitful (Groce, Trasi, & Yousafzai, 2006), and also if the Millennium Development Goal 6 (P. Thomas, 2005) is to be achieved.

2.7.1 Risk factors for HIV infection among people with disability

The available literature from Africa and elsewhere throws more light on how the risk factors highlighted above increase the vulnerability of PWD to HIV infection. In the following paragraphs, these will be examined in detail.

2.7.1.1 *Lack of access to education*

Children with disability are seldom enrolled in school due to attitudinal, economical, transportation and architectural barriers (Groce, 2004b). Therefore, only 3.0% of PWD generally have access to education (Helander, 1998). This is worse for females as only 1.0% of women & girls with disability have access to education (Helander, 1998). In addition, UNESCO (2006) reports that about a third of the 77 million children not enrolled in schools are disabled. The report also asserts that less than 10.0% of African children with disability are enrolled in schools. Apart from having access to HIV/AIDS education through schools, literacy has been identified as being crucial to accessing printed HIV/AIDS information (Medel-Anonuevo & Cheick, 2007). Because illiterate persons lack reading and writing skills, they are not able to access printed HIV information or to clarify or assess how accurate such information is in printed materials, hence do not know how to protect themselves against HIV infection. Thus, illiteracy increases the vulnerability of PWD to HIV infection

2.7.1.2 *Poverty*

Poverty is both a cause and a consequence of disability (Elwan, 1999), and it is also linked to HIV infection (Groce, 2004b). Elwan (1999) maintains that poor people are more exposed to the causes of disability. In addition, Fremstad (2009) expands that: ‘disability can result in job loss and reduced earnings, barriers to education and skills development, and a myriad of other challenges that can, in turn, lead to economic deprivation and hardship.’ Additionally, Jonsson and Wiman (2001) note that education plays a key role in eradicating poverty, particularly for children with disability. Because PWD often lack good education, they have less employment opportunities and less economic power.

Conversely, training and further education do not always translate into employment for PWD (Kuh, Lawrence, Tripp, & Creber, 1988). Attitudinal and architectural barriers, such as discrimination and ignorance by employers and fellow employees or a disability-unfriendly working environment, play major roles in the employment of PWD. In the US, the

unemployment rate of PWD was 16.5% in October 2009 compared with 9.2% for non-disabled persons (CPS, 2009). The same report posits that the employment-population ratio for PWD was 18.1% versus 64.0% for the non-disabled. Although many African countries lack these kinds of statistics, there is evidence that the rate of unemployment is likely to be higher among PWD than the general public due to employment discrimination (Choruma, 2007; Mulindwa, 2003). Hence, according to Elwan (1999), PWD are among the world's poorest of the poor.

Women and girls with disability are particularly more vulnerable to poverty than males with disability due to their lack of education and employment (Rousso, 2003). Rousso (2003) argues that a cultural bias exists with respect to the education of girls, which is aggravated by the presence of a disability. The global literacy level of women with disability is 1.0% versus 3.0% for PWD generally (Helander, 1998). Additionally, evidence from Africa (Mulindwa, 2003) shows lower literacy levels among women (46.8%) than men (54.1%). Moreover, the US CPS (2009) report shows a lower employment-population ratio among women with disability than men with disability (26.7% versus 29.4%). With less employment opportunities and thus being more impoverished than men, coupled with the male dominance in sexual matters in Africa, women and girls with disability could easily compromise their sexual rights and be exposed to HIV infection. An economically unstable woman or girl with disability is likely to be less empowered to negotiate safe sex with a potential sexual partner who caters for her financially (Mulindwa, 2003).

Income poverty can also cause limited access to health and preventative services (Fremstad, 2009), and this may impact on PWD accessing HIV-related services. It is possible for someone with disability not to have money for transport to get to the hospital or to offset the bill of the health service itself. In the case of HIV, diagnosis and treatment may be delayed as a result.

2.7.1.3 Sexual activities and risky sexual behaviours

Contrary to the myth of asexuality, PWD are sexual beings like any other human beings (Walker-Hirsch, 2007). A study revealed that adolescents with physical disability were as

sexually active as their peers without disability (M.M. Cheng & Udry, 2002). In addition, Osowole and Oladepo (2000) found that over a quarter of their respondents with hearing impairment in Nigeria were sexually experienced. Moreover, Kef and Bos (2006) reported sexual experience in 54.2% of their visually impaired sample who responded to a question about their experience of sexual intercourse. Similarly, Blum et al. (2001) indicate that adolescents with emotional disability were significantly more likely than the control group to experience sexual intercourse before the age of 12.

Reasons for sexual encounters reportedly included sexual urges, relationships or marriage, experimentation, rape, financial/material gains (Mulindwa, 2003; Munthali, Mvula, & Ali, 2004; Touko, 2009; Wazakili et al., 2006). As noted by Wazakili et al. (2006), the need for survival often overrides sexual well-being for some PWD and this places them at risk of HIV infection.

Many studies have also documented PWD's risky sexual behaviours, such as inconsistent condom use and having multiple sexual partners. The following paragraphs highlight the key issues:

Condom use during first sexual intercourse: In a study by Mulindwa (2003), only 12.5% of men and 6.7% of women with disability reported condom use during their first sexual experience. The low condom use may be due to the fact that, despite the high awareness of condoms (94.3% of men and 89.7% of women) in the study, 15.8% and 22.4% of the male and female respondents respectively had never seen one. This raises the question about condom availability to PWD. In fact, Munthali, Mvula, and Ali (2004) confirm that 24.0% of PWD in their study did not have ready access to condoms. Other reasons for low condom use were attributed to lacking knowledge about how to use them and that the nature of respondents' disability interfered with the skills needed to easily use a condom (Choruma, 2007; Munthali et al., 2004).

Gender disparity was also evident, suggesting that men with disability had better skills related to condom use and were able to access them more readily than women with disability. Almost 15.0% of PWD in a study by Munthali et al. (2004) did not use condoms because they did not like them. Women with disability are fearful to negotiate safe sex (Philander & Swartz, 2006; Wazakili, Mpofu, & Devlieger, 2009). This group of women would rather not practise safe sex in

case they lose their men or are exposed to abuse at the hands of their partner. People with disability, especially women, are therefore at high risk of contracting STIs, including HIV.

Condom use during last sexual intercourse: Reported condom use during respondents' last sexual intercourse was also low, at 24.0% and 10.0% for men and women respectively, as indicated by Mulindwa (2003). The reported increase in condom use during the last sexual intercourse compared to during first sexual intercourse may reflect ignorance about sexual health and safe sex at the time of PWD's sexual debut.

Future condom use: The intention to use condoms was also low, with more males (54.3%) than females (34.5%) intending to use condoms in the future (Mulindwa, 2003).

Multiple sexual partners: PWD having multiple sexual partners has been documented (Mulindwa, 2003; Touko, 2009). Males were consistently shown to have more sexual partners than women, as exemplified by Mulindwa (2003), who showed that 24.6% of men versus 18.9% of women had multiple partners, and by Touko (2009), who revealed that 53.0% of men and 37.0% of women had multiple partners. Additionally, lack of dating opportunities was identified as a reason for women with disability having multiple sexual partners (Wazakili et al., 2006). Women with disability were also prone to permit their non-disabled husbands to get involved in multiple sexual partnering in order to keep such men (Mulindwa, 2003; Philander & Swartz, 2006).

2.7.1.4 Lack of sexuality education

Historically, sexuality of PWD has received little or no attention due to the myth of their asexuality (Milligan & Neufeldt, 2001). There has been an unusual silence around the topic from all quarters and, as a result, PWD have often been denied sexuality education by professionals, teachers, and parents (Wazakili et al., 2009). Even with the increased awareness of the need for comprehensive sexuality education for PWD, service delivery has been poor, which is attributed to a lack of trained professionals and the fear experienced by both professionals and clients about raising such a topic (Di Giulio, 2003; Milligan & Neufeldt, 2001).

Parents of PWD usually perceive them as being childlike and fail to recognise or acknowledge their sexuality (Di Giulio, 2003). Therefore, they tend to withhold sexuality information or restrict such information to issues such as menstrual hygiene or pregnancy prevention, avoiding the issue of STIs, as documented by Wazakili et al. (2006). Teachers and carers are also sceptical about sexuality education of PWD, either because they lack appropriate teaching skills (Christian et al., 2001) or they believe it will make them promiscuous (Hanass-Hancock, 2008).

Therefore, PWD are ignorant of their sexuality and reproductive health and rights (Kallianes & Rubenfeld, 1997), and are vulnerable to STIs and HIV infection. Until recently, HIV/AIDS programme developers and governments have been unaware of how PWD are at risk of HIV infection because they have no idea of disability issues (Groce, 2004b). Similarly, disability activists lack expertise in HIV/AIDS issues and/or it was not their priority.

2.7.1.5 Inaccessible healthcare, including HIV/AIDS-related services

Groce (2004b) argues that healthcare services are usually inaccessible to PWD due to attitudinal, economical, architectural, transportation, and communication barriers. For example, Mulindwa (2003) reports that despite high awareness of reproductive health services among his sample, 57.0% of men and 58.0% of women with disability judged the services to be inaccessible. In addition, lack of transportation was the reason given by 60.0% of women with disability for not using antenatal services in a study in Malawi (Munthali et al., 2004). In another study in Nigeria, 70.0% of young PWD did not know where to access reproductive health services (Olaleye et al., 2007). This may explain the low utilisation of healthcare services and use of alternative health services reported in the study by Munthali et al. (2004).

Proximity to health care centres could be challenging for PWD, who may have to travel a long distance to access services (Choruma, 2007). Participants in this study also expressed concerns about the inaccessibility of such centres to persons with mobility disability, and the fact that staff lacked skills to communicate with persons with speech or hearing problems. This can present a strong ethical issue in terms of confidentiality, which has an implication on HIV testing.

In addition, health workers' training does not include the social aspects of disability, which accounts for their low knowledge of and ill-preparedness to attend to the health needs of PWD (Choruma, 2007; Kallianes & Rubenfeld, 1997; Yousafzai et al., 2004). Moreover, their unfriendly attitudes towards PWD make it complicated and humiliating to utilise services, as reported by participants in two studies (Choruma, 2007; Yousafzai et al., 2004).

Furthermore, large HIV/AIDS campaigns seldom connect with PWD because they are not available in accessible formats, for instance, incorporating sign language for the hearing-impaired; Braille for the visually-impaired; and simple language for intellectually impaired persons (Groce, 2004b). More often than not, venues for HIV/AIDS information are also inaccessible to persons in wheelchairs (Choruma, 2007). This lack of exposure to sexuality and HIV/AIDS education suggests that PWD are likely to be less knowledgeable about the epidemic and how to protect themselves from getting infected.

2.7.1.6 Low HIV/AIDS knowledge and risk perception

Studies show that HIV/AIDS knowledge among PWD has consistently been low (Enwereji & Enwereji, 2008; Munthali et al., 2004; Yousafzai et al., 2005). Although there are not many comparative studies in the sector, the few available ones indicate that PWD's HIV/AIDS knowledge was lower than that of their non-disabled peers (Grassi, Pavanati, Cardelli, Ferri, & Peron, 1999; Groce et al., 2007; Otte et al., 2008; Yousafzai et al., 2004).

Yousafzai et al. (2005) note that PWD's level of HIV/AIDS knowledge varies according to the nature and severity of their disability. For example, a communication barrier was identified among those with hearing impairment; printed materials are inaccessible to persons with visual impairment; and access to meeting places is difficult for persons with physical impairment. This finding is corroborated by Olaleye et al. (2007), who report lower knowledge of HIV/AIDS among school-going persons with hearing and speech impairments than other PWD in Nigeria.

Yousafzai et al. (2004) also reveal that PWD in their study had access to a lower range of HIV/AIDS information sources than their non-disabled counterparts. Otte et al. (2008) reports a

similar finding in that the visually-impaired participants reported access to HIV/AIDS information to mainly be through spoken channels, via churches and mosques, whereas the non-disabled also accessed such information from posters/billboards. Consequently, the level of HIV/AIDS knowledge of PWD was also lower than that of the non-disabled in both studies. Moreover, PWD in these studies were more likely to report wrong HIV transmission routes such as sharing of toilets and utensils with infected persons, kissing, and inhaling in dirty places than the non-disabled. In addition, many of them were not able to differentiate between HIV and TB (Yousafzai et al., 2004). Lack of HIV transmission and prevention knowledge, as indicated above, could translate into a higher rate of exposure to HIV among PWD.

Furthermore, as demonstrated by participants in the study by Mulindwa (2003), HIV risk perception was low despite the reported sexual risk factors for infection. More females (55.0%) than males (44.0%) considered themselves at risk of HIV infection. This may reflect the socialisation of men and the perception that they are to be strong and invincible. Participants admitted that there was a risk of HIV infection due to having a history of unprotected sex and multiple partners. In contrast, most (90.0%) of the respondents in a study in Zimbabwe perceived themselves to be at high risk of HIV infection (Nganzi & Matonhodze, 2004). The gender disparity followed the same trend, whereby more females than males perceived themselves to be at high risk. The 10.0% that considered themselves to be at low risk thought so because they had never engaged in sex or else practised serial partnering instead of multiple partnering. This suggests that they were still confused about the routes of transmission of the virus, thus underrate their risk, thinking the virus cannot be transmitted through having serial partners. In addition, Wazakili et al. (2006) found that PWD and even parents often rationalised the reasons for their low HIV risk perception in the face of risky sexual behaviours, whereas a few others were ignorant or pretended to be ignorant of the sexual transmission routes of HIV.

2.7.1.7 Sexual abuse

Persons with disability are at higher risk of sexual abuse than the non-disabled (L.M. Mitchell & Buchele-Ash, 2000). Women and girls with disability are particularly soft targets for sexual abuse (Kvam & Braathen, 2008). Rousso (2003) suggests that this is linked to the nature of their disability, which may make it difficult for them to assess violent situations, defend themselves and/or flee, or report abuse. On the other hand, they are perceived as sick, weak and helpless, and thus are easy prey for sexual predators. She further explains that this is exacerbated by being denied sexuality education which could equip them with the opportunities and skills to recognise and address violence.

Furthermore, a communication barrier may make it difficult for PWD to report sexual abuse to a trusted adult (L.M. Mitchell & Buchele-Ash, 2000). It is also possible for a person with intellectual disability to be declared an incompetent witness if she cannot articulate the incident (Dickman & Roux, 2005). Therefore, the case may go unreported or, if reported, may be dropped due to a lack of evidence.

Within the current HIV/AIDS pandemic, the issue of sexual abuse of PWD is increasingly important because of the misconception that a man can be cured of HIV/AIDS by having sex with a virgin (Groce & Trasi, 2004). Women and girls with disability are often considered virgins due to the myth of their asexuality. They then stand the risk of becoming HIV-infected because men may sexually violate them. In addition, such violent sexual encounters are risky because they are likely to be unprotected and, because of the force that is usually involved, there may be internal injury that further increases the chance of HIV infection.

Mulindwa (2003) reveals that 22.0% of the women respondents' first sexual encounters had been due to rape. Similarly, 7.0% of 1,704 persons with hearing impairment in Kenya reported rape as their first sexual encounter (Steadman Group, 2008). Additionally, most of the participants (93.0%) in the study by Philander reported being aware of sexual abuse among persons with visual impairment, which was brought about due to unequal power relations (Philander & Swartz, 2006). Although none of these studies directly compare the rate of sexual abuse among PWD with that experienced by the non-disabled, Groce (2004b) suggests that they are up to three

times more at risk of sexual abuse than non-disabled persons. It could also be suggested that the vulnerability of women with disability to HIV infection is higher than with non-disabled women and men with disability considering their higher rate of exposure to rape.

2.7.1.8 Stigma and social exclusion

Stigma is associated with disability, and has been argued to play a higher role in determining the sexual identity of PWD than the myth of their asexuality (Milligan & Neufeldt, 2001). Our society does not celebrate ‘differences’ but rather expresses hostility towards ‘anything’ that falls short of its socially constructed ‘normalcy’. Thus, PWD are often looked down upon for deviating from the societal standards of ‘beauty’. This has particular relevance for women, who are expected to be ‘beautiful’, and whose other attributes are deemed secondary. By nature of their disability, women with disability do not fulfil this ‘expectation’ because they cannot walk, talk, respond to or make eye contact, reason or understand, and listen like other women, and may thus be deemed unacceptable as marriage partners.

Studies have documented that non-disabled persons are conservative about dating and marrying PWD, which, in some cultures may be related to the belief that disability is a result of parents’ past sins (Chen, Brodwin, Cardoso, & Chan, 2002; Nunkoosing & John, 1997). Therefore, PWD are socially marginalised with regard to intimate relationships, and may be considered unsuitable by non-disabled persons.

Moreover, Taleporos and McCabe (2001a) suggest that the realisation of being unable to match the ‘ideal’ body negatively impacts on PWD’s perceptions of their bodies. In their study, the participants felt unattractive and thought others viewed them as such, and this was influenced by having received negative feedback from their environment, namely in the form of being criticised for being ‘different’ and experiences of having difficulty in finding a partner.

Consequently, low body esteem may lead to low sexual esteem. A woman who considers her body aesthetically unappealing is not likely to think herself sexually attractive, which may manifest in limited romantic opportunities for women with physical disability. However, there is

no proof that their sexual needs (Taleporos & McCabe, 2001b) and performance (depending on the nature and severity of the physical disability) is lower than those of the general population. In fact, persons with physical disability demonstrated stronger sexual needs than the general population in a study by McCabe (1999). Taleporos and McCabe (2001b) thus suggest that the combination of high sexual needs and low sexual experience can actually decrease sexual esteem.

It has also been discovered that sexual esteem varies according to the severity of one's physical disability, gender and the duration of the disability (McCabe & Taleporos, 2003). The authors found that persons with severe physical disability were significantly more likely to have lower sexual esteem and sexual satisfaction and a higher level of sexual depression than those with mild impairments and the non-disabled. In addition, women with physical disability demonstrated significantly more positive feelings about their sexuality and significantly more frequent mutual sexual experiences than males. Moreover, persons who had experienced physical disability for a long period reported significantly more positive sexual feelings. In another study, physical impairment was shown to attract social and sexual barriers that led to increased negative feelings that they were less sexually desirable and that having a disability limited their sexual expression to a great extent (Taleporos & McCabe, 2001b).

The consequences of low body and sexual esteem present in various forms (Howland & Rintala, 2001). Some of the women with disability in this study experienced rejection from potential suitors upon the discovery of their physical disability. Other women reacted to their frustration by becoming indiscriminating and accepting date requests from just about anybody who asked because they feared not having someone in their life or to prove that they are worthy of love. Similarly, a woman in the study internalised the societal stigmatisation and saw herself as being of low value and undeserving of a good partner.

Furthermore, some parents and families overprotect their daughters with disability (Howland & Rintala, 2001). Though this may be considered caring, it is actually stigmatising. They believe that women with disability cannot be loved by any sensible man, and react by protecting them from any potential partners. By not letting them socialise with other people, they are indirectly sending the message that women with disability are of less value than other women, and are to be

isolated. Such attitudes deny PWD the opportunity to learn social skills that are necessary for forming and maintaining relationships (Wazakili et al., 2006).

In contrast, one should also not overlook the possibility of non-disabled men who hunt women with disability for the wrong motives, as experienced by a participant in the study by Howland and Rintala (2001). Such men believe that nobody will desire these women and, after marrying them they, begin to subject them to inhumane treatments. However, this is not sufficient reason to isolate and prevent women with disability from opportunities to have intimate relationships.

In addition, Howland and Rintala (2001) documented that as a result of having been rejected, a few women with disability had become very afraid of rejection, overly agreeable in a relationship, and would accept just about anything from their partners in a bid to keep the relationship going. In addition, Hassouneh-Phillips and McNeff (2005) found that women with disability prefer to be partnered with non-disabled men in order to affirm their worth and desirability as women. Similarly, men with disability are reluctant to have women with disability as partners because they claim these women are not capable of performing household chores (Wazakili et al., 2006). Thus, this kind of rejection from both sides leaves PWD with only a few, uncertain options – relationships with non-disabled persons.

To summarise, the low body and sexual esteem experienced by PWD, especially women, coupled with the desire to be partnered, is capable of subjecting them to partner abuse (Hassouneh-Phillips & McNeff, 2005) and exploitation. Such abuse could lead to the inability to negotiate safe sex, which will increase their rate of exposure to HIV infection. Similarly, overprotection and stigmatisation by parents and families leaves PWD frustrated and leads them to be indiscriminate in their sexual lives, which in turn has an implication for HIV transmission.

2.7.1.9 Substance use

As discussed earlier, substance use has been documented among PWD and it is a serious problem (Bachman, Drainoni, & Tobias, 2004). For example, Groce (2004b) reports substance use among women with disability and persons with hearing impairment. Another study among

adolescents with spinal cord injury in South Africa also reports substance use, especially of alcohol, as a coping strategy to handle frustration (Njoki, Frantz, & Mpofu, 2007).

Furthermore, studies have documented substance use among PWID (Blum et al., 2001; McCrystal et al., 2007). Kalyva (2007) reports higher use of tobacco among adolescents with attention deficit hyperactivity disorder (ADHD) than adolescents with mild intellectual disability and the non-disabled attending the same mainstream school. The adolescents with ADHD claimed they used tobacco due to peer pressure but they had little knowledge of its effects on health. Another study also linked regular use of alcohol and other drugs by persons with intellectual disability to criminal offences (McGillivray & Moore, 2001). These instances highlight the risky nature of substance use.

Risk-taking behaviours such as substance use also predispose one to risky sexual practices, as found by Wazakili (2006). Some of the participants in the study reported having had sex under the influence of alcohol. This would have impaired their reasoning or judgement, and could have resulted in unprotected sex and increased vulnerability to HIV infection.

2.7.2 Intellectual disability and HIV/AIDS – a review of the literature

A substantial number of studies are now focusing on disability and HIV/AIDS in Africa (Hanass-Hancock, 2009a). In her review of 36 empirical studies emanating from Africa, Hanass-Hancock (2009a) indicates that only three such studies target PWID. However, only one (Dawood et al., 2006) of the studies primarily focused on adolescents with intellectual disability, while the other two addressed sexual abuse among women with intellectual disability (Dickman & Roux, 2005; Dickman, Roux, Manson, Douglas, & Shabalala, 2006). All of the studies were conducted in South Africa. None of the six studies from Nigeria (Enwereji & Enwereji, 2008; Groce et al., 2007; Olaleye et al., 2007; Olawuyi, 2006; Osowole & Oladepo, 2000; Otte et al., 2008) addressed intellectual disability specifically, except for one general study that included the group (Olaleye et al., 2007).

To acquire a good grasp of the published studies on intellectual disability and to identify the knowledge gap in the field, a review of the literature on the topic was undertaken. The search was conducted on the UKZN Federated Search using 13 search engines: BioMed Central; CINAHL; Academic Search Complete; ERIC; African Journals Online; Google Scholar; Highwire Press; African Index Medicus; Cochrane Library; Nexus: current and completed research; Psychinfo; PubMed; and ScienceDirect. The search string for the search was:

(hiv OR aids OR "human immunodeficiency virus" OR "human immuno-deficiency virus" OR "acquired immune deficiency syndrome" OR "sexually transmitted diseases" OR "sexually transmitted infections" AND "intellectual disabilit" OR "mental retardation" OR "developmental disabilit*" OR "mental disabilit*" OR "learning disabilit*")*

The search covered all years and was not limited to any geographical location. This was done in order to capture all of the studies that had been published on the topic, regardless of the country concerned and the year of publication.

A few articles cited in other studies were searched for manually and a search was done on Google. The University of KwaZulu-Natal (UKZN) library catalogue was also searched for completed theses on the topic. Overall, 670 studies were returned, but only 13 empirical studies that focused on HIV/AIDS and intellectual disability/mental retardation/developmental disability/mental disability/learning disability and four others from Nigeria (Olaleye et al., 2007), Kenya (Steadman Group, 2008) and South Africa (Hanass-Hancock, 2008, 2009b) that included persons with intellectual disability (but were on PWD generally) were selected for this review. Seventeen studies were reviewed. A study from the US (Blanchett, 2000) was excluded because, although it focuses on learning disability, the term was not used to mean intellectual disability, unlike in studies from the (United Kingdom) UK, where intellectual disability is the term used for intellectual disability. Only sixteen empirical studies were suitable for the review. Thereafter, the relevant articles were extracted from the UKZN e-journals (TDNet), the internet and from the University of South Carolina library in the US.

2.7.2.1 Geographical distribution of the studies

Seven of the studies are from the US, one is from the UK (Newens & McEwan, 1995) and one is from Australia (McGillivray, 1999). Eight of the studies are from Africa and six of them are from South Africa. However, only half of the African studies focus specifically on intellectual disability and HIV/AIDS (Dawood et al., 2006; Gilbert, 2007; Meel, 2009; Rohleder & Leslie, 2009). The inclusion of the remaining four studies, which generally focus on disability, is useful in comparing the situations of PWID and PWD with respect to HIV/AIDS.

2.7.2.2 Focus of the studies

Four of the studies emanating from the US focus on prevalence and case reports of HIV infection among PWID (Kastner, Hickman, & Bellehumeur, 1989; Pincus, Schoenbaum, & Webber, 1990; Pledgie & Schumacher, 1993; Walkup, Sambamoorthi, & Crystal, 1999). For the first time, a prevalence study on HIV infection among PWID has been reported in Africa, and in South Africa specifically (Meel, 2009). The study is important in confirming the high risk of HIV infection among females with intellectual disability as a result of the high incidence of sexual abuse, and the need to find a solution to this problem. However, more prevalence studies are needed in Africa and with a wider coverage, focusing on more aspects than teenagers with a prior history of sexual abuse.

Six studies report on the risk factors for HIV infection among PWID, including their HIV/AIDS knowledge, sexual behaviours, attitudes and barriers to sexuality (E.J. Brown & Jemmott, 2002; Dawood et al., 2006; Gilbert, 2007; McGillivray, 1999; Olaleye et al., 2007; Steadman Group, 2008). Only one of the studies compares PWID with non-disabled persons (McGillivray, 1999). Two studies examine the social construction of disability in the context of HIV infection in Africa (Hanass-Hancock, 2008, 2009b).

Finally, three studies examine the provision of sexuality and HIV education to PWID with specific focus on evaluating their effectiveness (Newens & McEwan, 1995), assessing service delivery (Birch, Angermeier, & Gentsch, 2002) and analysing the barriers to the provision of

sexuality and HIV education (Rohleder & Leslie, 2009). A US study assesses HIV/AIDS services provision to individuals with intellectual disability across 44 states (Marchetti, Nathanson, Kastner, & Owens, 1990). There is a gap in Africa in relation to the evaluation and assessment of services because there is little or nothing that would quantify being assessed. This then calls for the development of intervention programmes in this continent. In addition, there is more need to understand the sexuality of PWID in Africa so as to inform the development of relevant intervention programmes.

2.7.2.3 Early research efforts in the field

Early published studies in this field, spanning from 1989 to 1999, were from developed countries like the US, UK and Australia. Most of them describe the efforts to determine HIV prevalence among PWID in supervised residential settings, while a few describe the vulnerability and evaluation of HIV education programmes. Kastner, Hickman, and Bellehumeur (1989) state that the main purpose of these efforts is to sensitise agencies rendering services to persons with intellectual disability to the need to formulate an HIV/AIDS operational policy to address the educational, medical, ethical and legal concerns of clients and staff. For example, in 1989 the authors described the first two reported cases of HIV infection among PWID to highlight the complex social, ethical, medical and political issues raised by the cases.

Still in the US, Pincus, Schoenbaum, and Webber (1990) undertook anonymous screening for the HIV antibody using the discarded sera of 241 individuals from a health facility in New York that provided services to adults with intellectual disability. Nobody tested HIV-positive. Another study in Delaware also did not detect the HIV antibody among 345 individuals with intellectual impairment in a residential setting (Pledge & Schumacher, 1993). Furthermore, Marchetti, Nathanson, Kastner, and Owens (1990) undertook a survey of 44 US states to assess HIV/AIDS policy development, education, and training and service provisions. This study was important in that it pointed out the various loopholes in the administrative response to HIV and intellectual disability in the US and helped to improve HIV/AIDS-related services for PWID.

Despite the fact that published studies undertaken to screen for the HIV antibody among PWID in the US did not yield any seropositivity, as discussed above, it was not assumed that this group of individuals have lower risk of HIV infection than the general population. This was an example of good practice which Africa should learn from, especially in situations where it may be difficult to obtain HIV prevalence data on PWID on ethical grounds.

However, the largest group of HIV-infected PWID (119) at that time was identified through reviews of New Jersey HIV/AIDS and Medicaid registry files of a cohort of 8,294 adults with HIV (Walkup et al., 1999). The discovery further clarified the areas where more efforts needed to be concentrated as it was also the first published study that characterised US HIV-positive PWID compared to HIV-positive persons in the general population. They were reported to be more likely to be female and black, and had become infected through injecting drugs. This study also emphasised the importance of data collection methods with wider coverage, namely not only focusing on PWID in supervised residential settings. In Africa, for example, many PWID reside with their nuclear or extended families within the communities. Any efforts targeted at this group in an African setting should therefore consider covering both settings (institutional and community).

2.7.2.4 Low HIV/AIDS knowledge

Some studies document the vulnerability of PWID to HIV infection (E.J. Brown & Jemmott, 2002; McGillivray, 1999). One of the main issues is low knowledge of HIV/AIDS among individuals with intellectual disability compared to that of other PWD and the non-disabled (McGillivray, 1999; Olaleye et al., 2007). Only 86.0% of the participants in a South African study were aware of HIV, and they wrongly believed transmission could occur through being bitten by insects, casual and non-casual contact (Dawood et al., 2006). One fifth also believed that there was a cure for HIV. However, another study in South Africa reveals a high knowledge of HIV among its sample (Gilbert, 2007). In contrast to how other studies of PWD and those with intellectual disability reported television as the main source of HIV information (Dawood et al., 2006; Mulindwa, 2003), 67.0% of the participants reported teachers being their source of

HIV information. Teachers are a more reliable source of HIV information for learners with intellectual disability because they are likely to use tailored methods to pass on such information, whereas television is targeted at the general population. This may account for the high level of HIV knowledge demonstrated by this sample. However, only 50.0% of them knew about AIDS symptoms.

2.7.2.5 Sexual activities

Moreover, PWID are sexually experienced, contrary to the myth of their asexuality. Gilbert (2007) indicates that 25.0% of her sample was sexually experienced. Similar results (14.0%) are reported in Dawood et al.'s (2006) South African sample. Compared with other PWD, individuals with intellectual impairment are shown to be more sexually active (Olaleye et al., 2007). Gender disparity, whereby males are more sexually experienced than females, has also been demonstrated (Gilbert, 2007). In addition, E.J. Brown and Jemmott (2002) found that their tendency to be overly compliant and to understand things literally may make them not fully understand the implications and consequences of sexual intercourse, and they conclude that it is a normal part of any friendship.

2.7.2.6 Low condom use

Their high exposure to sexual intercourse coupled with inconsistent condom use (Dawood et al., 2006; Gilbert, 2007) has the potential to increase their exposure to HIV infection. Additionally, they have low confidence in achieving safe sex practices such as condom use (McGillivray, 1999). Studies show PWID could perceive unprotected sex with peers and the non-disabled as a way of achieving status and normalisation (E.J. Brown & Jemmott, 2002; Hanass-Hancock, 2009b). This is a socially excluded and marginalised group and such disadvantage poses a big threat to their sexual health in the era of the HIV/AIDS epidemic.

2.7.2.7 Low HIV risk perception

Individuals with intellectual disability also have low HIV risk perception (E.J. Brown & Jemmott, 2002). In addition, even when they are well informed of the risks, the desire to be accepted and liked may make them conform to their partners' risky sexual behaviours. Furthermore, Jacobs, Samowitz, Levy, and Levy (1989) suggest that the reason for low HIV risk perception may be due to PWD's denial of personal risk to the fatality of AIDS, and an inability to recognise the link between risky behaviours and HIV infection among those with moderate intellectual disability. Moreover, because sexuality is often denied to PWID, the resulting frustration may make them take to alcohol or drug use, which increases their risky sexual behaviours and vulnerability to HIV infection.

2.7.2.8 Sexual abuse

Furthermore, sexual abuse and/or exploitation are common experiences among females with intellectual disability (Gilbert, 2007; Hanass-Hancock, 2009b). As Dickman and Roux (2005) state, they are generally perceived as incompetent witnesses and, as such, are denied justice in the absence of good legal support, especially in Africa. A recent South African study reports HIV seroprevalence among 14.0% (4) of its sample of 28 individuals with intellectual impairment with a history of sexual abuse (Meel, 2009). In 90.6% of the cases, close relatives were implicated. Many such cases may go unreported, thus adolescents with intellectual disability must be armed with skills to recognise, avoid and report suspected sexual advances.

2.7.2.9 Sexuality and HIV/AIDS prevention education

Birch, Angermeier, and Gentsch (2002), utilising structured telephone interviews with 19 directors of education cooperatives in rural Indiana, report a mean ranking of 7.4 for the importance of HIV/AIDS education for learners with intellectual disability. It is not surprising then that little collaboration between the administrators and the school district AIDS resource

persons was reported. The poor administrative collaboration may be responsible for the variations in collaboration between health and special educators at classroom level. The study also reveals that provision of HIV transmission and prevention varies according to the severity of intellectual disability. Students with mild intellectual disability are more exposed to HIV education by their inclusion in general health education classes than those functioning at moderate and severe levels. Although inclusion is good, the extent to which learners with mild intellectual disability will benefit from such an approach is questionable. According to Di Giulio (2003), they require more disability-specific education and may not understand concepts at the same rate as mainstream learners.

Birch et al. (2002) identify other barriers to HIV education in the rural setting, including: low perceived severity of HIV by parents and the community; conservatism of parents and the community regarding the appropriateness of HIV education; low collaboration between health educators and special educators; the reluctance of special educators to teach HIV education; and lack of a tailored HIV education curriculum.

Training of special educators in HIV prevention and development of a tailored HIV curriculum are therefore crucial to the provision of HIV education to this group of learners (Birch et al., 2002). They also recommend individualised instruction for each student. Moreover, the issue of culture must not be overlooked when developing an HIV education curriculum and, thus, parents have to be involved from the beginning of such efforts. The community also has to be involved to make the education successful.

Furthermore, Newens and McEwan (1995) evaluate two approaches of teaching HIV/AIDS education to learners with severe intellectual disability through non-participatory observation. Their analysis yields the following effective ways of presenting sexuality and HIV education to IIL of up to 18 years:

- Learning materials should be explicit in nature, but reinforcement of the private nature of sex should be done on a one-to-one basis to avoid confusion
- The social aspects of personal and sexual relationships should not be separated from the more explicit anatomical/physical aspects

- There is always heterogeneity in learning ability, even within a group. To overcome the problem of differing needs for information against the need to involve all members of a group, questions should be directed to individual group members in turn
- A teacher-pupil relationship ensures better integration and interaction than using an outsider
- To account for the heterogeneity of group members' experiences of sexual relationships, group work should always be complemented by individual one-to-one sessions
- The subjects of sexual intercourse and disease transmission should not be closely linked so as to avoid greater perceived risk than is realistic
- Practising using condoms increases self-efficacy
- Using materials from a limited range of previously validated programmes is better than using newly acquired resources
- Sexuality and HIV education should be culturally sensitive, reflecting the parental cultural values
- Information should be delivered within the context of health, personal relationships and body awareness education

The study again draws attention to the key role of teachers in providing sexuality and HIV/AIDS education to learners with intellectual disability. However, health workers and HIV programme developers may also play a role in establishing training collaborations with teachers, thereby adequately equipping them to teach these learners. Parents should be included, as mentioned earlier, so that their input and values can be integrated into such education and they will be able to follow up with their wards at home.

Despite the high vulnerability of PWID to HIV infection, they are often denied sexuality and HIV education based on the assumption that it will make them more promiscuous (Hanass-Hancock, 2008). In addition, they are less likely to be reached by HIV education than other PWD (Olaleye et al., 2007; Steadman Group, 2008). Comprehensive sexuality and HIV education, apart from providing the standard education, is beneficial in equipping this vulnerable group with social and interpersonal skills for forming and maintaining relationships, as well as skills necessary for recognising and avoiding sexual abuse (Di Giulio, 2003). However, Rohleder and

Leslie (2009) report a tension between the human rights of PWID to sexuality and HIV information and the assumed need to restrict their sexual expressions by people who are saddled with the responsibility of caring for them. Although acknowledging their need for sexuality and HIV education, the authorities would rather offer them education that discourages sexuality by painting sex as dangerous and associated with abuse and diseases.

The time is ripe for Africa to rise up to the challenge of curbing the spread of HIV among PWID, as with other citizens. Against this background it is necessary to know more about this group in relation to their sexuality and vulnerability to HIV infection, and to come up with informed and tailored interventions.

Currently, there are no such studies in Nigeria despite her teeming population, and the likelihood of a higher number of PWID than in other African countries. This group is being denied its human rights to factual information and access to skills that will assist with leading healthy sexual lives.

2.8 Conceptual (Theoretical) framework

This study is guided by a theoretical framework to address its salient aspects.

2.8.1 The Integrated Model for Change (I-Change Model)

The I-Change Model (de Vries et al., 2003) is used as the conceptual framework to explain and predict sexual abstinence in IIL and ML (Figure 2.5). This model is a new version of the ASE model (Attitude-Social influence-self-Efficacy model), and it combines constructs from other behavioural change theories like Bandura's Social Learning Theory, the Theory of Planned Behaviour, the Health Belief Model and the Transtheoretical Model.

The model suggests that intention directly predicts behaviour while other motivational/cognitive factors such as attitudes, social influence and self-efficacy indirectly influence behaviour by predicting the intention to carry out such behaviour. Attitudes are the perceived advantages and disadvantages resulting from behaviour. Social influence encompasses perceived norms, modelling and support by significant others regarding behaviour, while self-efficacy implies the self-belief in being able to confidently perform behaviours.

Furthermore, these cognitive factors are directly influenced by awareness factors (knowledge, cues to action, outcome expectations and risk perception). Awareness factors are in turn fuelled by predisposing factors (social-behavioural and psychological factors), as well as informational factors comprising the quality of messages being passed, the channel of communication and the sources of such messages. However, a person's abilities (to perform the behaviour) and environmental barriers may determine whether his/her intention will be converted to the actual behaviour. These two constructs, ability factors and barriers, are excluded in the testing of the I-Change Model in this study because they do not determine the formation of intention.

Sexual abstinence is chosen as the behaviour to be investigated in this study because it applies to all learners. Even those who are already sexually experienced may decide to practise secondary sexual abstinence. Condom use is another behaviour that could have been explored but it is deemed unsuitable in this study because it does not apply to all learners. In addition, it is possible that most of the IIL are not well aware of condom or the concept behind its use.

Applying the I-Change Model to this study, sexual abstinence is determined by learners' intention to abstain from sex. Such intention is mediated through motivational factors such as their attitudes towards sexual abstinence, the kind of social influences they are exposed to and their self-efficacy regarding the behaviour. Awareness factors like knowledge of HIV transmission, cues to action (severity of the disease and knowing someone with HIV) to change behaviour, outcome expectations and perceived risk of HIV infection influence motivational factors.

In addition, two constructs – predisposing and informational factors – exert influence on awareness factors. Hence, learners' social-behavioural and psychological characteristics such as age, gender, living arrangements, school location, religion, as well as informational factors (the quality, format and sources of HIV messages reaching them) impact greatly on their awareness factors.

Studies that have utilised the I-Change Model among adolescents are few. In a study in Europe that aimed to explain the effects of anti-smoking parenting practices on adolescents' smoking intentions and behaviour using I-Change Model, attitudes, perceived social influences and self-efficacy were found to predict intention to smoke (Huver, Engels and de Vries, 2006). Significant associations were also established between practices and smoking. However, some practices were associated with less smoking (e.g., communication about health risks of smoking) while others were associated with more smoking (e.g., rewards for not smoking). One major limitation of the study was small effect sizes indicating that smoking behaviour is determined by various factors rather than only parenting practices. In another case, items on the social influence, awareness, outcome expectations and intention constructs of I-Change Model predicted HIV testing among in-school adolescents in South Africa (Taylor et al., 2007).

Though the I-Change Model is relatively new and has not been used among mild/moderate intellectually impaired adolescents before, its ability to predict sexual abstinence is tested in this study to determine which of its constructs are relevant to this group. However, a similar cognitive-behavioural model, Health Belief Model (Stretcher & Rosenstock, 1997), had been successfully simplified and adapted to develop HIV prevention educational interventions for mild/moderate intellectually impaired persons by the Young Adult Institute (YAI) in the United

States of America (Jacobs et al., 1989). Health Belief Model's principles of perceived threat (closely related to perceived risk and attitudes), prevention (perceived benefits of taking action) and self-efficacy to be able to manage necessary behavioural changes were utilised to develop a video intervention for persons with intellectual disability by YAI. A South African study by Dawood et al. (2006), on HIV knowledge, attitudes and practices among mild intellectually impaired adolescents also used a questionnaire based on similar cognitive theories (though it did not test the relevance of any of the theories). In addition, Siebelink, de Jong, Taal, and Roelvink (2006) suggest that general behavioural models may be fruitful in exploring issues of sexuality among people with intellectual disability.

Historically, cognitive-behavioural interventions are often denied to persons with intellectual disabilities and this has decreased their access to potentially beneficial services (Taylor, Lindsay, & Willner, 2008). This, according to the authors, is due to the belief that these individuals do not have cognitive abilities required to understand or benefit from such interventions. Research show no evidence to support that deficits in particular cognitive abilities result in poorer outcomes for such clients when placed on cognitive-behavioural therapy (CBT) (Durlak, Fuhrman & Lampman, 1991; Sukhodolsky, Kassinove & Gorman, 2004). Similarly, CBT interventions that utilise cognitive skills training like self-management, self-monitoring, self instructional-training were found to show promise (Willner, 2005). Hatton (2002) in a review of psychosocial interventions for adults with intellectual disabilities experiencing a range of mental health problems concluded that with appropriate modification, this approach may be a feasible intervention option for persons with mild intellectual disabilities. This was also supported by Lindsay (1999).

Based on the foregoing, it is therefore believed that the I-Change Model (a cognitive-behavioural model) could be useful in predicting sexual abstinence among IIL as well as ML in this thesis. Thus, in applying the I-Change Model to this study, the study utilised procedures that are well adapted and simplified to facilitate understanding of the key concepts by persons with intellectual disability who have higher level of intellectual functioning. Additionally, about 85.0% of persons with intellectual disabilities fall within the mild category (American Psychiatric Association (APA), 2000). In a developing country like Nigeria, this is the category

of intellectual disabilities often found in schools, as parents often lock up the other categories of persons with intellectual disabilities at home. Moreover, there is an overlap in the categorising of mild and moderate intellectual disabilities by APA in such a way that those at the lower level (IQ = 50-55) of mild intellectual impairment also fall within the upper level (IQ = 50-55) of moderate intellectual impairment. As a result, most of the mild/moderate IIL in this study are functioning at higher and relatively similar level and could therefore be grouped together to a good extent. Similar study by McGillivray (1999) also grouped persons with mild and moderate intellectual disabilities together and compared them with non-disabled persons. In addition, YAI (Jacobs et al., 1989) developed a HIV prevention education that targeted persons with mild/moderate intellectual disabilities together as a group.

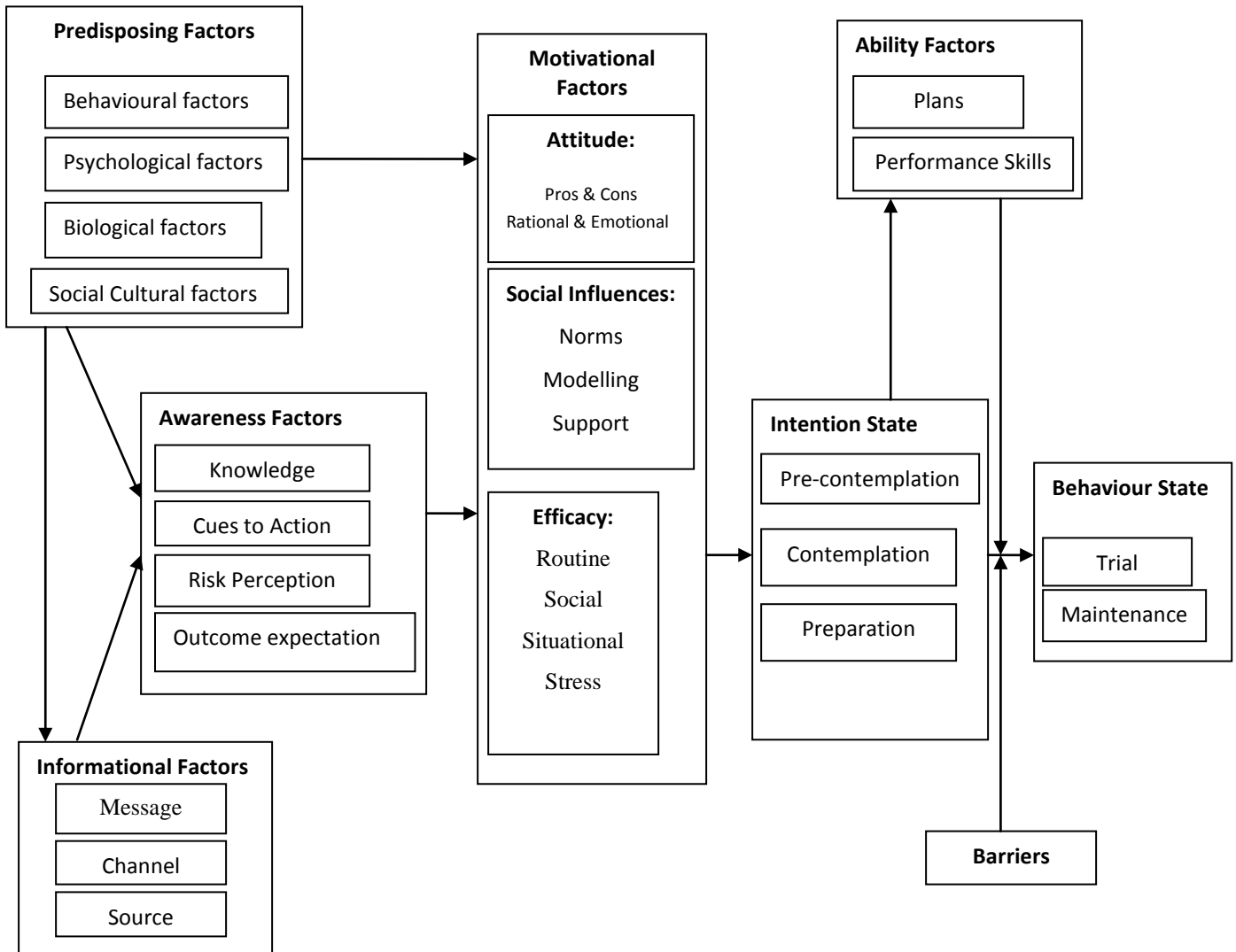


Figure 2.5: The Integrated Model for Change (de Vries et al., 2003)

2.8.2 The ABC Model

The ABC Model is a simple human behaviour model by Skinner (1953). The model is based on three constructs: antecedents, behaviour and consequences. Antecedents can be defined as the factors (cues, signals or conditions) that precede and trigger or influence the adoption of behaviour. This is based on the fact that all behaviours are influenced by the environment. On the other hand, consequence is the perceived or actual incidents that follow as a result of behaviour. If the consequence is perceived to be positive, the probability that the behaviour will be sustained is high. Negative consequence is more likely to discourage the behaviour from recurring.

Applying the ABC Model to sexual abstinence as behaviour of interest in this study, the antecedents will include demographics, attitudes towards sexual abstinence, beliefs about sexual abstinence, awareness of HIV/AIDS, its mode of transmission, and risk perception. Consequences will entail the probable results of unprotected sexual exposures including, the risk of HIV infection, sexually transmitted infections (STIs) and unwanted pregnancies, knowing someone who is HIV positive. These types of negative consequences are likely to discourage sexual experiences. Whereas, the positive consequences of sexual abstinence such as being free from STIs, unwanted pregnancies and often dreaded HIV infection have the ability to reinforce sexual abstinence.

The model relies mainly on reinforcement of positive behaviours to discourage unsafe behaviours, which is more therapeutic. While this is good, the current study aims to come up with educational interventions, including skills to reduce the vulnerability and risk of HIV infection among IIL. As a result, the ABC model is not suitable for the study.

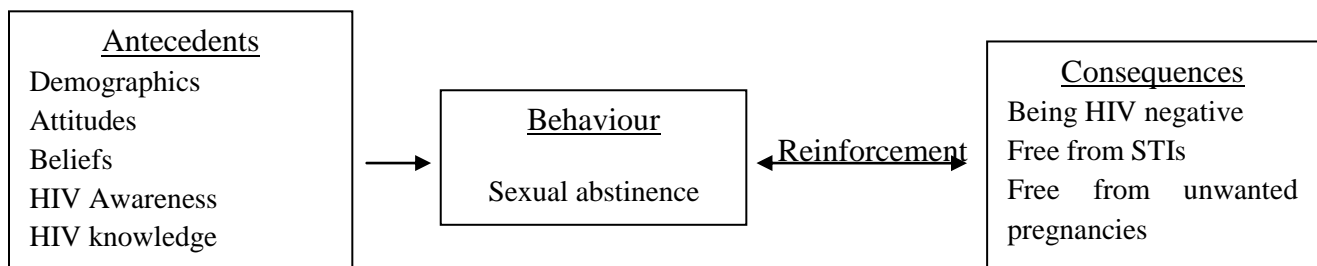


Figure 2.6: The ABC Model

2.9 Conclusion

This chapter reviewed previous studies in the fields of disability, intellectual disability, adolescence, and HIV/AIDS. It drew readers' attention to the interactions between HIV/AIDS and disability with particular reference to intellectual disability. The chapter also highlighted the vulnerability of PWID to HIV infection and pointed out the need for sexuality and HIV prevention education programmes for this group of individuals. However, the development of tailored interventions is only possible if information about this vulnerable population is available. Finally, the chapter presented the conceptual framework that this study is based on. In the next chapter, the methodological approaches adopted in the study are described.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter deals with the methods adopted in the study. It describes the location, design, scope and population of the study. The chapter further provides an account of the study sampling strategies, sample size, and inclusion and exclusion criteria. In addition, it explains the data collection methods and tools, as well as data analysis procedures. This chapter ends by discussing the ethical issues that were taken into consideration in the course of the study.

3.2 Study location

The study was carried out in Oyo State, Nigeria. The country comprises 36 states, excluding the Federal Capital Territory (Figure 3.1). Nigeria is the most populous country in SSA and has a population of about 140 million. There are over 250 ethnic groups that speak more than 250 languages, but the official language is English (Pennington, 2007). However, more than 50.0% of the population belongs to the Hausa-Fulani, Yoruba and Ibo ethnic groups. About 50.0% of the population comprises Muslims, 40.0% Christians and 10.0% traditional worshippers.

Oyo State is in the South West of Nigeria (Figure 3.2) and the people are indigenously Yoruba. The state was created on February 3, 1976 with its capital in Ibadan. Presently, the state is made up of 33 local government areas. The first university and teaching hospital in West Africa and the first television house in Africa are located in Ibadan, Oyo State. In addition, the state has other public and private tertiary education institutions, teaching hospitals, secondary schools and primary schools. To cater for the education of PWD, various special schools have been established, as well as schools where their needs are integrated into those of the regular schools. A few such schools cater for the education of the IIL and are scattered all over Oyo state.

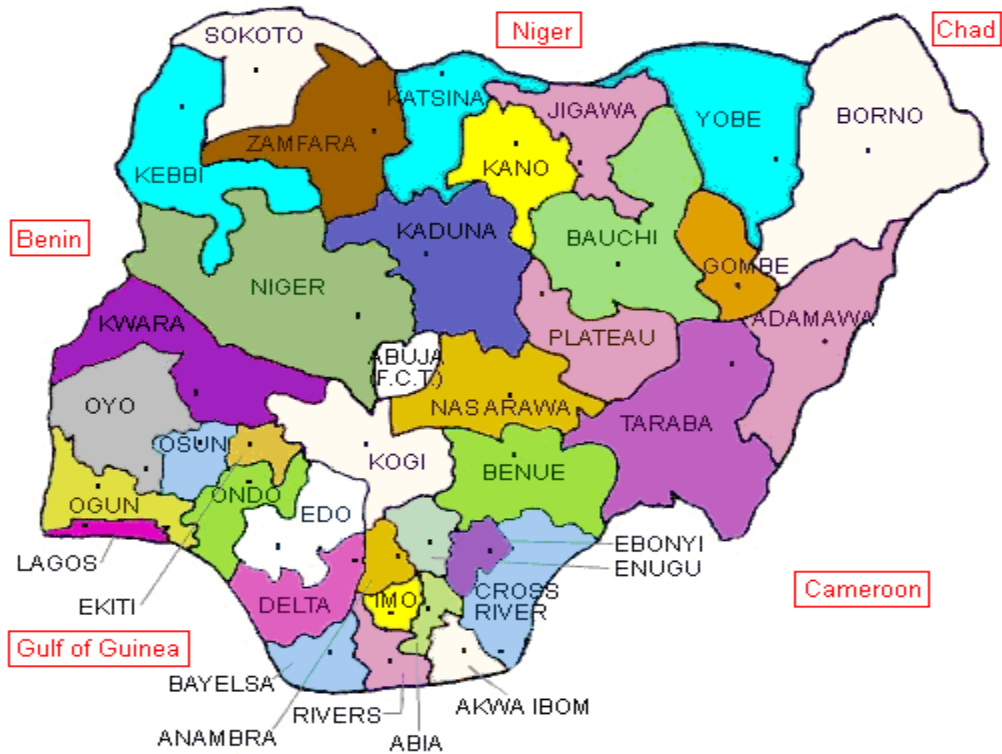


Figure 3.1: A map of Nigeria

Source – <http://www.motherlandnigeria.com/geography.html> (Boomie, 1998 - 2002)

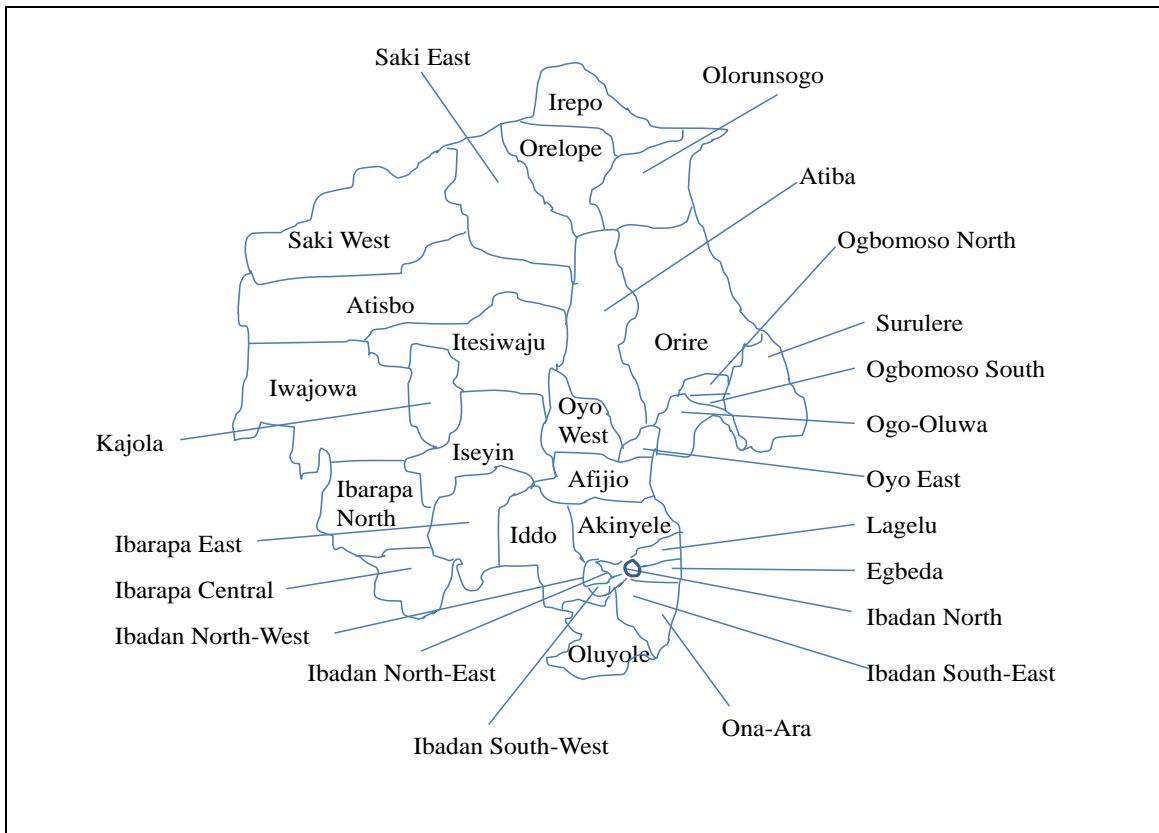


Figure 3.2: The Study Area – Oyo State

Source – <http://www.oyohealth.org/> (Oyo State Ministry of Health, 2009-2010)

3.3 Study design

This was a cross-sectional, comparative study that identified and compared the levels of HIV knowledge, attitudes, and sexual practices of mild/moderate IIL and ML in selected schools in Oyo State, Nigeria. It tested the relevance of the I-Change Model in predicting sexual abstinence. The study utilised mixed-methods – a structured questionnaire (quantitative method) and focus group discussions (FGD), in-depth interviews (IdI) and key informant interviews (KII) (qualitative methods) – to obtain relevant information.

A structured questionnaire was used to identify and compare the differences in knowledge, attitudes, and sexual practices of learners and to quantify the observed differences, while FGDs

and IdIs were used to investigate the contextual factors informing HIV knowledge, risk perception, and sexual behaviours of the participants. Key informant interviews explored the effectiveness of school-based HIV/AIDS prevention education for both groups of learners, as well as served as an independent source of information on the sexual practices, level of risk of HIV infection and barriers to HIV-related services among learners.

The combination of quantitative and qualitative approaches utilised in this study is unusual as the two are often considered to represent two paradigms (Sale, Lohfeld & Brazil, 2002). However, the combined approach may provide a more comprehensive exploratory and descriptive picture of an area of which little is known. This approach is able to provide a variety of perspectives to explore HIV and intellectual disability, thus providing a deeper understanding than if only one method had been used. In addition, having an independent source of data (teachers) may provide better validity considering the problem of bias associated with self-reports on sensitive topics like sexuality and HIV/AIDS, and the fact that this study also involves a population of learners with cognitive impairments.

Researchers in support of combined quantitative and qualitative methods have argued that the use of combined approaches attempts to compensate for weaknesses of individual quantitative and qualitative methods (Connidis, 1983; Steckler, McLeroy, Goodman, Bird & McCormick, 1992), thus allowing for triangulation. In addition Steckler et al. (1992) argued that the complex phenomena that are often posed by health education and promotion programmes require the application of multiple methods in order to properly understand and evaluate them. This coupled with the vulnerable nature of intellectual disability also calls for utilisation of qualitative method, in addition to a quantitative one, to adequately explore the lived experiences of persons with intellectual impairments (Bryman, 1989). Additionally, previous studies revealed that people with intellectual disability were positively affected by participating in the studies, which contradicts the fear usually experienced by parents, caregivers and teachers regarding that they will be negatively affected by participating in sexuality research employing qualitative and/or quantitative methods (Brantlinger, 1985; McCarthy, 1998; G. Thomas & Kroese, 2005). The combination of quantitative and qualitative methods is thus applicable to this study which

heavily relies on health education and promotion focussing on HIV/AIDS, sexuality and intellectual disability.

According to Steckler et al. (1992), there are four approaches to integrating quantitative and qualitative methods:

1. Qualitative methods are used in order to explore a topic and inform the development of quantitative research methods. Conducting a FGD to obtain data to help to develop quantitative questionnaire
2. Qualitative methods are utilised to help in understanding a predominantly quantitative study by the use of open-ended questions for further information on close-ended questions in a questionnaire
3. Quantitative methods are used as adjuncts to support findings of qualitative survey. An example is administering a questionnaire to members of an in-depth ethnographic study
4. Parallel use of both quantitative and qualitative methods in which the results of both are compared and evaluated against each other

Therefore, this study in utilising a combination of quantitative and qualitative approaches to explore HIV and intellectual disability adopted the second and fourth approaches stated above.

3.4 Scope of the study

The scope of the study covered issues related to HIV/AIDS awareness, transmission, perceived risk of infection, attitudes, outcome expectations, cues to action, social influences, self-efficacy, sexual practices, as well as the prevalence of sexual abstinence among both groups of learners.

In addition, the contextual factors informing learners' HIV knowledge, risk perception, HIV testing and sexual behaviour were explored. Independent opinions and views from teachers about the latter and on how effectively the learners were being reached by HIV/AIDS information in schools were also gathered.

Moreover, the relevance of the I-Change Model in predicting sexual abstinence was tested, and the findings were used to suggest guidelines for a school-based HIV prevention intervention tailored to the special needs of learners with mild/moderate intellectual impairment.

3.5 Sampling procedures

3.5.1 Study population

In Nigeria, learners spend six years in primary schools and six years in secondary schools. At the primary level, there are six levels according to the years of study – primary 1 to 6. Each primary level is made up of a number of classes. The six years spent in secondary level are divided into two phases: Junior Secondary School and Senior Secondary School. A student takes three years to complete each level.

At the junior level, there are three categories according to the year of study:

- Junior Secondary School (JSS) 1
- Junior Secondary School (JSS) 2
- Junior Secondary School (JSS) 3

At the senior level, there are also three categories signifying the years of study:

- Senior Secondary School (SSS) 1
- Senior Secondary School (SSS) 2
- Senior Secondary School (SSS) 3

Each of JSS 1-3 and SSS 1-3 is then made up of a number of classes.

Oyo State is divided into eight educational zones: Ibadan City; Ibadan Less City; Ibarapa; Ogbomoso; Oyo; Saki; Kajola; and Irepo. According to information obtained from the Oyo State Ministry of Education, there were 14 special schools that trained IIL in six of the eight educational zones, excluding Ibarapa and Irepo, with an enrolment of 1,025 IIL from all

categories at the time of the study (567 [55.3%] boys and 458 [44.7%] girls) (see Table 1). However, one more school, which was not on the list provided by the Ministry of Education, was discovered in the Oyo educational zone during fieldwork. Therefore, this school was not included in the study. In addition, one of the special schools in Ibadan City was used in the pilot study but not included in the actual study.

There were 548 junior and 432 senior public secondary schools in Oyo State (Oyo State Government, 2009). The Oyo State Ministry of Education declined to release the actual enrolment statistics of students in its secondary schools. These schools were located all over the eight educational zones in the state. Four of the schools provided inclusive education for students with disability on the same premises and/or in the same classrooms. However, the few IIL enrolled in such schools were separated into different classrooms due to their special education needs.

The age group studied (12-19 years) was mostly found at the primary level of education for IIL and at the secondary level of education for ML. Because of their cognition impairment, IIL seldom reach the secondary level and, as such, only a few of them (27) were enrolled in four secondary schools that offered inclusive education in the state at the time of this study. They were excluded from the study because they were not at the same educational level as most of the IIL in the state, and their exposure to HIV/AIDS and sexuality education might have been different.

The study population was made up of mild/moderate intellectually impaired and mainstream learners aged 12-19 years in the 13 public special schools (primary) and nearby regular schools. The special schools were all located in six educational zones – Ibadan City (six schools); Ibadan Less City (one school); Ogbomoso (two schools); Oyo (one school); Kajola (one school) and Saki (one school).

3.5.2 Sampling strategy for the quantitative method

Due to the small number of IIL in the special schools, the study recruited every learner that met the inclusion criteria and was willing to participate in the study. This was done to be able to get a sample size that is representative of the study population (for the quantitative method). However, ML in selected schools were recruited into the study through multi-stage random sampling. A multi-stage random sampling entails selection of the primary sampling units (PSU) as the first-stage sample, and then drawing a sub-sample from each selected PSU to form the second-stage sample (Snijders, 2001). A secondary school was selected based on proximity to each of the special schools, and one class was picked randomly from each of the three junior and two senior secondary school classes. Senior Secondary School 3 (SSS 3) learners were not available because they were writing West African School Certificate Examinations at the time of the study. Participants between the ages of 12 and 19 were randomly selected from each of the five classes.

Different sampling strategies were employed in this study to be able to adequately ensure representation/inclusion of IIL. Researchers have argued in favour of striking a balance between rigorous academic research and the inclusion and/or representation of marginalised groups such as persons with intellectual impairments in research (Booth, 1996; Walmsley & Johnson, 2003; Woodring, Foley, Rado, Brown, & Hammer, 2006; Aldridge, 2007). Therefore, some flexibility have been suggested in research involving such marginalised groups without jeopardising the quality and ethics of research while ensuring that marginalised groups do not become more marginalised by constant exclusion from research (Woodring et al., 2006).

3.5.2.1 Sample size

Group sample sizes of 257 in group one and 257 in group two achieve an 80.0% power to detect a difference of 0.11 between the group proportions (D'Agostino, Chase, & Belanger, 1988; Fleiss, Levin, & Paik, 2003; Lachin, 2000), in respect of sexual abstinence. The proportion in group one (IIL) is assumed to be 70.0% under the null hypothesis and 81.0% under the alternative hypothesis. This was arrived at by using a previous study in South Africa (Dawood et

al., 2006) that found an abstinence rate of 86.0% among II adolescents and, according to available literature, this was the only study that documented such in Africa. The proportion of sexually abstinent persons in group two (ML) is assumed to be 0.70 (70.0%), based on a study in Oyo State, Nigeria, that reported 65.0% sexual abstinence among learners (I.O. Fawole, Asuzu, Oduntan, & Brieger, 1999).

To allow for multivariate analysis (especially among the sexually active respondents), the sample size was increased to 300 per group.

The test statistic used in the sample size determination is the two-sided Fisher's exact test. The level of the test was targeted at 0.05.

A statistician was consulted when determining the sample size.

3.5.3 Sampling strategies for the qualitative methods

3.5.3.1 FGD

Four of the six educational zones were selected for the FGDs. The six educational zones were stratified into two, based on their level of urbanisation. Three of them (Ibadan City, Oyo, and Ogbomoso) were urban and the other three (Kajola, Ibadan Less City and Saki) were less urban. Ibadan City, Oyo, Kajola and Ibadan Less City educational zones were selected from the two strata via balloting. There was only one special school in each of the educational zones except in Ibadan City. A special school was then selected randomly for the Ibadan City educational zone. Regular schools in the vicinity of each of the special schools were selected.

Participants were randomly selected for FGDs by asking every sixth learner if s/he was interested in participating in the study.

3.5.3.2 *In-depth interviews*

Schools were picked randomly in each of the six educational zones. Every sixth learner who met the inclusion criteria in the selected school was asked if s/he was interested in participating in the interview. Two learners were then selected by balloting among those who were interested. Twelve IIL and 12 ML participants were selected using this procedure.

3.5.3.3 *Key informant interviews*

Teachers were recruited for the study based on recommendations of the head teachers or principals. After explaining the purpose of the study to the head teacher/principal, s/he was asked to recommend a teacher who was familiar with the subject. In the case of teachers of IIL, teachers in charge of the IIL classes were selected for the study. When such teachers were not willing to participate, another teacher with relevant experiences was suggested by the unwilling teacher. The first teacher interviewed was then asked by the interviewer to suggest another teacher that could provide valuable information about the subject. Twelve IIL teachers and 12 ML teachers were selected overall.

3.5.4 Inclusion criteria

The study included:

- Only learners with mild/moderate intellectual impairments with significant limitations in adaptive behaviours, and learning in educable and trainable classes in special schools
- Mainstream learners without intellectual impairments in regular schools
- Learners between the ages of 12 and 19
- Respondents (both IIL and ML) from the six educational zones with special schools for the training of IIL

3.5.5 Exclusion criteria

The following were excluded from the study:

- Learners who didn't fall within the age range of 12-19 years
- Married learners
- Intellectually impaired learners with communication problems (speech difficulties) that made them unable to express themselves
- The few IIL in secondary schools

3.6 Data collection methods and tools

The psychological measures were first administered. This started by administration of Draw-A-Person (DAP) to set the stage and get learners relaxed for the other methods. Raven's Progressive Matrices were then administered immediately after. Subsequently, Vineland's Social Maturity Scale was administered to teachers/caregivers of IIL who could not complete the previously mentioned measures. After this, quantitative data were collected by the administration of a structured questionnaire. Qualitative data were the last collected through FGDs, in-depth and key informant interviews. The administration of questionnaire preceded qualitative methods to allow for deeper exploration and understanding of the results of the former (Steckler et. al., 1992) and to explain the lived experiences of participants in relation to the findings from the quantitative data.

3.6.1 Psychological measures

Three standardized measures – Draw-A-Person, Raven's Progressive Matrices, and Vineland's Social Maturity Scale were used to determine IQ and establish intellectual impairment. The DAP and Vineland's Social Maturity Scale were used as adjunct tests when the Raven's Progressive Matrices could not be administered and/or to provide additional information for establishing level of intellectual functioning.

3.6.1.1 *Draw-A-Person Intellectual Ability Test for Children, Adolescents, and Adults (DAP: IQ)*

According to Williams Jr. et al. (2006), ‘the DAP: IQ is a quick screening test used to estimate IQ’. It can be administered individually or to a group of individuals from age 4 to 89 (Reynolds & Hickman, 2004). The DAP: IQ developed by Reynolds and Hickman (2004) was used as a supplement to SPM and CPM in determining IQs of learners. It is a human figure drawing (HFD) that provides a non-verbal measure of cognitive abilities of individuals in a non-threatening, enjoyable format, and is useful for the assessment of minority children (Sattler, 1982; Williams Jr., Fall, Eaves, & Woods-Groves, 2006).

This test was selected as adjuncts to others in this study, first, because exposure to human figures, the communality of fundamental features, as well as drawings of human figures by humans are universal phenomena (Reynolds & Hickman, 2004). Moreover, standardised scoring systems are based on the conceptual aspects of the drawing rather than the artistic features. And once test-takers are assured that the artistic features of their drawings is of less importance, they are willing to take the test. In addition, the test has been confirmed to be suitable in challenging situations such as the assessment of persons with cognitive impairments and non-reading or non-English speaking persons.

HFDs are also considered valid and appropriate in measuring cognitive ability due to the scoring system and the developmental nature of the depiction of human figure (Reynolds & Hickman, 2004). The authors stressed further that for this purpose, HFD must not emphasize motor coordination. DAP: IQ complies with this by being based only on the conceptual aspects of the drawings.

3.6.1.2 *Raven’s Progressive Matrices*

This test was designed to measure Spearman’s *g*, the general factor of intelligence, or the non-verbal component thereof. It is also a measure of one’s ability to identify relationships, think analogically and think clearly (Raven, Raven, & Court, 1998). The test has proven reliable and

valid across a wide range of populations with ‘untimed’ (capacity test) or ‘timed’ (speed or efficiency) tests.

Two forms of the matrices, Standard Progressive Matrices (SPM) and Coloured Progressive Matrices (CPM), were administered to ML and IIL respectively. The SPM test is intended to be administered to people from age 6 to 80 years. It consists of 5 sets (A-E), each comprising 12 items, making 60 abstract geometric items in all. All items are presented in black ink on a white background. The CPM, however, was designed for younger children (5-11 years), the elderly and people with intellectual disability. It can also be administered to older children and adults. It comprises sets A and B from the SPM, with a further 12 items between them, labelled as set Ab. Most items are presented on a coloured background to make them attractive to participants, and hence maintain their attention.

For both matrices, the items within a set become increasingly difficult, requiring greater cognitive capacity for decoding and analysing information. The tests can be administered individually or to a group. Each test comes with an administrator’s/examiner’s manual to be used to determine the examinee’s IQ based on his/her scores on the test, along with age and other demographics.

3.6.1.3. *Vineland’s Social Maturity Scale*

The Vineland’s Social Maturity Scale (Doll, 1965) measures social competence, self-help skills and adaptive behaviour from birth up to the age of 30 years. It can be used in planning therapy and/or individualised instruction for people with intellectual impairment or emotional disorders, and also as an adjunct to establish intellectual impairment or mental retardation.

It consists of a 117-item (categorised by age) interview with a parent, sibling or other primary caregiver. Personal and social roles are evaluated in the following areas: daily living skills (general self-help, eating and dressing); communication (listening, speaking and writing); motor skills (fine and gross, including locomotion); socialisation (interpersonal relationships, play and leisure, and coping skills); occupational skills; and self-direction.

3.6.2 Quantitative methods

A structured questionnaire was used for quantitative data collection.

3.6.2.1 Development of structured questionnaire

The questionnaire was adapted from a previous study from the University of KwaZulu-Natal on HIV/AIDS and adolescents (Taylor et al., 2007). The questionnaire (Appendix F) consisted of the following sections:

- Demographics
- Sexuality
- History of STIs
- HIV/AIDS awareness and testing
- Sexual abstinence as a preventative behaviour – perceived risk of HIV infection, attitudes, outcome expectations, social influences, self-efficacy, intention in relation to sexual abstinence
- HIV/AIDS transmission
- Cues to action
- Substance use

As the study by Taylor et al. (2007) assesses HIV testing among learners, it was imperative to develop different scales to assess sexual abstinence in this study. Therefore, to assess perceived HIV risk, attitudes, outcome expectations, social influences, self-efficacy and intention in relation to sexual abstinence, different scales were developed based on the literature on sexual abstinence of adolescents.

To reduce response biases associated with a sensitive issue like sex, the questions were arranged so that sexuality topics were not immediately introduced. In addition, questions about HIV transmission were at the end of the questionnaire. This was to elicit honest responses from the participants, especially regarding their sexual behaviours. It was likely that they would under-report their sexual activities if questions on HIV transmission preceded sexuality questions. The

sequence also allowed good rapport to be established between the participants and the interviewers before more sensitive questions were broached.

Furthermore, to facilitate that learners with intellectual impairment understood the questions, they were framed using simple, non-ambiguous language. Wherever possible, double-barrelled questions were avoided. People with intellectual disabilities are particularly prone to response biases (Sigelman, Schoenrock et al., 1981; Sigelman, Winer, & Schoenrock, 1982). Because questions may elicit either overt or passive responses, the careful design of questionnaires and interviews is vital to optimising responsiveness, reliability and validity (Sigelman et al., 1980).

Another study reveals that PWID are more likely than the control group to comply with unreasonable instructions and to be overly affirmative in their responses to questions (Rosen, Floor, & Baxter, 1974). Greater acquiescence is associated with more complex questions, when a question is not understood and possibly when the correct answer is unknown or not readily accessible (Sigelman, Budd, Spanhel, & Schoenrock, 1981).

In light of the aforementioned, the questionnaire was thus made up of a mixture of yes/no questions; yes/no questions followed by open-ended questions (e.g. 'have you ever had a STI, or not?' followed by 'how did you know that you had an STI?'); multiple-choice questions; and 5-points Likert's scale questions. To reduce acquiescence, yes/no questions were avoided wherever possible, except in cases where there was no alternative way of asking the question. In such cases, the questions were framed so that they ended in 'or not' (e.g. 'have you ever heard of HIV/AIDS, or not?'). This served two purposes: it granted the respondents the implicit permission to answer 'no' where there might be strong pressure to acquiesce, and also injected a conversational tone into the questions (McCabe, Cummins, & Deeks, 1999).

McCabe et al. (1999) suggest that pictures or graphic aids can also be used adjunct to questions to create better understanding. Therefore, pictures were used to facilitate better understanding of some of the questions, particularly with questions about knowledge of HIV transmission. They took the form of 'tell me about this picture'. McCabe et al. (1999) argue that this approach is preferable to asking "what are these people doing?" which would focus attention on an act, rather than general knowledge and feelings about a situation'. After respondents stated what a

picture was about, they then answered a knowledge-based question (e.g. the picture of a woman breastfeeding her baby was followed by the question: ‘if the woman is HIV positive, can HIV be transmitted from a breastfeeding mother to her baby?’).

For this purpose, visual resources from *All about me – a life skills, sexuality and HIV/AIDS education programme for learners with intellectual disability: a facilitator’s manual* (Johns, 2007) were adapted for use in this study. The manual was published by the Western Cape Forum for Intellectual Disability, and is being used in the Western Cape Province of South Africa to provide sexuality and HIV/AIDS education to learners with intellectual disability.

In addition, the 5-point Likert’s scale statements adopted a stepped approach for IIL so as to avoid ambiguity. For example, respondents were asked to indicate whether they agreed or disagreed with a statement, and then were asked to indicate how strong their agreement or disagreement was.

Measurement scales were developed to assess learners’ risk perception, attitudes, outcome evaluation, social influences, self-efficacy and intention in relation to sexual abstinence. It was based on previous literature on the subject.

Risk perception was measured with three positively-worded items. Risk perception increased along the gradient from 1 (strongly disagree) to 5 (strongly agree): *I think I can get HIV/AIDS; I need to change my behaviour to avoid HIV/AIDS; and people my age can get HIV/AIDS.*

Attitude was measured with four positively-worded items, two of which are misconceptions. The ratings were reversed for the misconceptions in that 1 denoted ‘strongly agree’ and 5 denoted ‘strongly disagree’, whereas, with the other positively-worded items, 1 denoted ‘strongly disagree’ and 5 denoted ‘strongly agree’: *sexual abstinence prevents STIs and HIV/AIDS; sexual abstinence prevents unwanted pregnancy; sexual abstinence is dangerous and unhealthy; and sexual activity is a sign of maturity.*

Five items, one of which was negatively-worded, measured outcome evaluation. Outcome evaluation increased along the gradient from 1 (strongly disagree) to 5 (strongly agree), except for the negatively-worded item, which increased from 1 (strongly agree) to 5 (strongly disagree):

sex now could mess up my future; sex now could not affect my future goals; sex could expose me to STIs; sex could expose me to HIV/AIDS; and sex could expose me to pregnancy.

Learners' social influence was measured using five negatively-worded items that were the right/normal things expected, and one positively-worded item that was not deemed the right thing. Confidence in receiving support from significant others increased from 1 (strongly disagree) to 5 (strongly agree) for the five negatively-worded items and from 1 (strongly agree) to 5 (strongly disagree) for the last item: *my boy/girlfriend would support us not to have sex now; my father would support me not to have sex now; my mother would support me to have sex now; my friends would support me not to have sex now; my friends are not having sex; and my brothers/sisters would support me to have sex now.*

Three positively-worded items measured learners' self-efficacy. Two of them signified high self-efficacy and scores increased from 1 (strongly disagree) to 5 (strongly agree), and the third item showed low self-efficacy, with scores going up from 1 (strongly agree) to 5 (strongly disagree): *I can firmly say 'no' to sex; I can have a boy/girlfriend for a long time without having sex; it is difficult to tell a lover that I don't want to have sex.*

Lastly, two negatively-worded items were used to measure learners' intention. Both of them showed the intention to postpone sexual activity until later in life and scores increased from 1 (strongly disagree) to 5 (strongly agree): *I will not have sex until I am married; and I will not have sex until I am older.*

3.6.3 Qualitative methods

3.6.3.1 Development of In-depth Interview guide

The researcher developed the interview in English using information gleaned from the available literature and past experience in the fields of adolescent sexuality, HIV/AIDS and disability. It was cross-checked and corrected by my supervisor and a colleague, who were also familiar with

this type of study and provided valuable advice. The guide was then translated into the Yoruba language and given to another Yoruba-speaker for translation back into English.

The in-depth interview guide (Appendix C) comprised semi-structured, open-ended questions in order to obtain as much information as possible. Follow-up/probing questions (listed and not listed) in the guide were asked as occasion demanded to seek clarification and obtain more information in the course of the interviews.

Basically, the interview guide explored issues around the following areas:

- HIV/AIDS awareness
- HIV transmission
- Sources of HIV information
- Sexual experience/inexperience
- Condom use
- Risk perception
- HIV testing

3.6.3.2 Development of Key Informant Interview guide

An instrument developed and used for the global survey on HIV/AIDS and Disability (Groce, 2004b) was adapted for the key informant interview among teachers of IIL. The guide (Appendix E) consisted of semi-structured, open-ended questions and other probing questions. The ‘yes/no’ answer questions were followed by ‘why’ to explore respondents’ reasons and explanations for their responses. It was made flexible to allow the introduction of probing questions that were not pre-listed. The key informant interview guide for teachers of ML (Appendix D) was adapted from the same global survey instrument but with a focus on young people rather than disability and persons with disabilities.

This guide served the purpose of assessing teachers’:

- Awareness of the risk of HIV/AIDS infection among both groups of learners
- Knowledge about the sexual activities of their learners
- Efforts towards provision of sex education and HIV/AIDS information to the learners

- Perception of HIV/AIDS-related services available to young people with and without disability
- Implementation of comprehensive sexuality education in Nigerian schools

3.6.3.3 Development of Focus Group Discussion guide

The researcher developed a FGD guide (Appendix B) to explore awareness of HIV/AIDS, its transmission, sources of HIV/AIDS information, sexual behaviours, HIV/AIDS risk perceptions, condom use and HIV testing among the learners. The research supervisor and a colleague offered advice and corrections to improve the questions used in the guide, which were open-ended, semi-structured and included probing questions. The English version was translated into Yoruba then translated back into English by another Yoruba-speaker. Thereafter, any ambiguous words were reviewed and amended as necessary.

3.6.4 Training of research assistants

The researcher developed a training guide in conjunction with a qualified psychologist. It was divided into two sections.

The first section focused on:

- The background of the study
- Aims and objectives
- The importance of accurate data
- Skills in communication
- Interpersonal relationships
- Interview techniques
- The phenomenon of intellectual impairment
- Methods of interviewing persons with intellectual disability
- Discussions of the research instruments

The second section was on:

- Familiarisation with the psychometric tests
- The importance of maintaining the integrity of the tests
- Procedures for test administration

The first section of the training was facilitated by the researcher and a specialist in the education of learners with intellectual impairments. A trained psychologist facilitated the second part of the training. Prior to the training, the researcher had already undergone training on the administration of psychometric tests with her supervisor, who is a clinical psychologist. The researcher also attended the training with the four research assistants.

The research assistants were recruited on the basis of their previous fieldwork experience, interest in the study, readiness to work with IIL, and competence in English and Yoruba. The research assistants comprised two females and two males. Two of them (a male and a female) were in their thirties while the other two were in their early twenties. Three of the research assistants were graduates and the other was seeking admission into a higher institution.

The training lasted five days and utilised lectures, brainstorming, role play and group work, and ended with a pilot test of the research instruments and psychometric tests. Concurrent evaluation of the activities was performed by the trainers and trainees. A debriefing meeting was held after the pilot study to discuss the field experiences and to jointly evaluate performances. At this stage, the research assistants were asked if they were still willing to participate in the main study. They all indicated their willingness to participate and filled out forms indicating such commitment.

3.6.5 Pilot study

As argued by Aldridge (2007), challenges often encountered in research involving persons with intellectual impairments “were neither self-evident from the outset nor were they of the kind more commonly discussed in research methods texts”. Therefore, to identify comprehension of the content and the possible challenges to expect in the actual study so that they could be

addressed early, all data collection instruments and measures were pilot-tested among ten ILL and ten ML drawn from one special and one regular school that did not form part of the study.

The plan to use a 5-point Likert's scale to assess risk perception; attitudes; outcome expectations; social influences; self-efficacy; and intention, and simplify it by adopting a stepped approach did not work out well. Learners with intellectual impairment always responded to the statements with yes/no/not sure. A 3-point scale ('yes', 'unsure, and 'no') was finally adopted in the questionnaire to avoid ambiguity in their responses. These were scored to increase along the gradient from 1 (no) to 3 (yes), and reversed to increase from 1 (yes) to 3 (no) as necessary.

During FGDs with the ML, it was discovered that one of the major reasons they engaged in sexual activities was the belief that it was a show of maturity among their peers. In addition, one of the measures of attitude in the draft questionnaire ('sexual abstinence is a sign of powerlessness') was difficult for them to understand during the guided self-administration and they asked questions to clarify what that actually meant. This was then changed to 'having sex now shows that you are mature' in the final questionnaire.

The first four measures of social influences on sexual abstinence by boy/girlfriends, fathers, mothers, and friends, which were worded with 'not' (e.g. my father would support me "not" to have sex now), were confusing as the participants always interpreted them without taking note of the 'not' in the sentences. These were then reworded without the 'not' (e.g. my father would support me to have sex now). The amendment also changed the direction of scoring for these items from 1 (strongly disagree) to 5 (strongly agree), to 1 (strongly agree) to 5 (strongly disagree), which, in the new 3-point scale, was equivalent to an increment of 1 (yes) to 3 (no).

Learners with intellectual impairment tended to be brief and slow in their responses. As such, a lot of follow-up questions were asked to clarify issues. In addition, the interviewers/facilitators had to be very patient with them and made a point of not getting irritated when trying to get responses from them. Whenever it was perceived that the participant with intellectual impairment did not understand the questions, such questions were repeated in another way or using another words to describe the same thing until s/he understood the question. Most often, questions were asked in a sequence to first explore the understanding or knowledge of the

concept. For example, when asking questions related to condom use, other questions like ‘do you know what a condom is?’ or ‘have you ever seen a condom?’ were first asked.

It was also noticed that IIL did not contribute during FGDs unless the questions were directed at individuals. This made it difficult in a large group of six to eight because questions had to be repeated and directed at individuals. The group size was then reduced to between four and five members in the actual study so that adequate attention could be given to encourage participation. However, they responded better during in-depth interviews due to the fact that these were one-on-one interviews and all of the attention was directed at only one person.

All these experiences were discussed with the research assistants during the post pilot study debriefing and the lessons learnt were applied to the actual study.

3.6.6 Data collection

3.6.6.1 Draw-A-Person Intellectual Ability Test for Children, Adolescents, and Adults (DAP: IQ) administration

In this study, the test was administered in groups of 15 to 306 ML (287 completed and returned the test) and individually to 300 IIL (292 completed the test). A plain sheet of white paper was placed at a right angle in front of each learner and a pencil was provided for drawing. The pencil was blunt (to avoid it being used to pierce the paper or injure somebody). To avoid erasure of responses, pencils with erasers were not used. Participants were first asked to write their name, age and class on the sheet of paper to assess their literacy and numeracy abilities. All of the ML could write their name, age and class, whereas only a few of the IIL could do so correctly. This was done to assess the literacy skills of the participants, particularly IIL. After ascertaining the proportion that could write their names, they were asked to erase their names before submitting their drawings.

Each learner was asked to draw a picture of him/herself based on the following standardised instructions:

I want you to draw a picture of yourself. Be sure to draw your whole body, not just your head, and draw how you look from the front, not from the side. Do not draw a cartoon or stick figure. Draw the very picture of yourself that you can. Take your time and work carefully. Go ahead (Reynolds & Hickman, 2004).

A few learners from both IIL and ML groups reacted by saying they didn't know how to draw very well. They were encouraged by being told: 'you don't need to be artistic in your drawing. I don't know how to draw very well either. Just draw a person the best way you can.' After hearing such words of encouragement, these learners went on to draw themselves.

The drawing session was not timed, and it took between 2 and 5 minutes for them to create a drawing. The test consists of 23 scoring criteria: head, hair, eyes, eyelashes, eyebrows, nose, mouth, chin, ears, neck, shoulders, arms, elbows, hands, torso, waist, hips, legs, knees, ankles, feet, clothing, and accessories. Scores from 0 to 1 point, 0 to 2 points, 0 to 3 points, and 0 to 4 points were assigned to the criteria depending on the item being scored (Williams Jr. et al., 2006).

3.6.6.2 Raven's Progressive Matrices administration

Raven's CPM was administered to 300 IIL, while SPM was administered to 306 ML between 12 and 19 years of age. The CPM was individually administered to IIL but SPM was administered to ML in groups of 15. Research assistants facilitated the administration.

When administering CPM to IIL, the particulars of the person to be tested were filled out on the answer sheet. Most of them did not know their age, thus the teachers extracted learners' ages from the class register. The test administrators worked side by side with the test-takers. The CPM booklet was opened at problem A1, which had the following instructions:

This is a box. There is a pattern inside the box. A part of this box has been cut out. Each of these choices below is the right shape to fill the space but only 1 of them can complete the pattern. Number 1 is the right shape but not the right pattern. Number 2 is not a

pattern at all. Number 3 is wrong. Number 6 is nearly right, but is wrong here. Now tell me which of them will complete the pattern.

If s/he was right, the administrator said 'yes, that is correct', then asked, 'why did you choose that?' If wrong, the administrator said it was wrong and repeated the explanation until the logic behind the problem was grasped. The administrator turned to problem A2 and asked the test-taker to point to the correct option. If s/he did not get it right, problem A1 was re-demonstrated and an answer was requested again for problem 2. If the answer was correct, the administrator proceeded to problem 3. This procedure was repeated up until problem A5. After that, the test-takers were allowed to complete the test while the administrator turned the pages, and just asked if they thought they had the correct answer, saying 'good', not 'correct' or 'wrong' after each answer.

The whole procedure was repeated for sets Ab and B of the test. The test-takers were allowed to change their minds and all answers were recorded. Only the last answer was scored, whether right or wrong. The preceding answers were crossed out but not erased. They were also asked to leave a difficult one out temporarily and then to go back to it later to complete it. If they still did not know the answer, guesses were encouraged as they were sometimes right. The test was not timed.

Group administration was adopted for SPM with the ML. A group of 15 learners sat at tables in a classroom, school hall or laboratory and were organised so that copying was prevented. A research assistant served as the test administrator and had an assistant. They sat facing the administrator and assistant. The test administrator had his/her own copy of the test booklet, answer sheet and poster-sized enlarged copies of problems A1 and A2. The enlarged copies were pinned to a board in front of the room so that A1 was covering A2.

Each test-taker also had a copy of the SPM test booklet, the answer sheet and a pencil. They were asked to fill out their particulars on the answer sheet and were guided by the administrator. Then, they opened their test booklets to problem A1 and were shown column 1 on the answer sheet. The administrator explained that the test is in three sets: A, Ab and B. When everyone

understood how to record his/her answers correctly, the administrator went on to demonstrate the test, starting with problem A1 as follows:

This is a box. There is a pattern inside the box. A part of this box has been cut out. Each of these choices below is the right shape to fill the space but only 1 of them can complete the pattern. Number 1 is the right shape but not the right pattern. Number 2 is not a pattern at all. Number 3 is wrong. Number 6 is nearly right, but is wrong here. Now tell me which of them will complete the pattern.

The test administrator then asked them which of the options was correct. They always answered that number 4 was correct, and were asked to record that in their answer sheets. The administrator and assistant went round to see if everybody had recorded that correctly. Any wrong entries were corrected. They were then instructed to turn to the next page for problem A2, which was also shown on the board. Most often they chorused the answer to that question and were asked to record it in their answer sheets as well. The people in charge checked again to see that they had recorded this correctly.

After this, they were allowed to continue with the test, and were advised to make sure that they completed the test. If they found any question difficult they could go on to the next one and come back to the difficult one. Guesses were allowed as they were sometimes right. Test-takers were told that they mustn't erase their answers if they thought they had made a mistake or changed their minds, and were instructed to rather put a line through the wrong answers.

The test administrator and assistant went round to check whether they had all answered the first five items correctly and if answers were being recorded in the right places. If anybody got the answers to any of items 1 to 5 wrong, the test administrator demonstrated problem A1 on the board again. The test was not timed so that everybody could work at his/her own pace.

3.6.6.3 Vineland's Social Maturity Scale administration

The Vineland Social Maturity Scale (VSMS) measures social competence, self-help skills, and adaptive behavior from infancy to adulthood. It is used in planning for therapy and/or individualized instruction for persons with mental retardation or emotional disorders. The Vineland scale, which can be used from birth up to the age of 30, consists of a 117-item interview with a parent or other primary caregiver (there is also a classroom version for ages 3-12 that can be completed by a teacher). Personal and social skills are evaluated in the following areas: daily living skills (general self-help, eating, dressing); communication (listening, speaking, writing); motor skills (fine and gross, including locomotion); socialization (interpersonal relationships, play and leisure, and coping skills); occupational skills; and self-direction. An optional Maladaptive Behavior scale is also available. The test is untimed and takes 20-30 minutes. Raw scores are converted to an age equivalent score (expressed as social age) and a social quotient.

The test was only administered to available and/or willing caregivers of eight learners with intellectual impairment who were not able to complete DAP: IQ. In this case, it was either administered to the class teacher or caregivers of those living in institutions. It was untimed, but on average it took 20 minutes.

3.6.6.4 Questionnaire administration

The questionnaire was self-administered by the ML to provide confidentiality and hence, elicit honest responses from them because of the sexuality components. However, research assistants read the questions along with them in Yoruba to provide for better understanding. They were instructed not to copy their friends'/peers' responses. In addition, they were advised not to speak their responses out loud. Moreover, it was anonymous, and so they did not put their names on the questionnaires. The questionnaire administration was carried out in a classroom, a school hall or laboratory away from other people, including teachers. Self-administration of the questionnaire, under the guidance of the research assistants, lasted an average of 15 minutes.

The questionnaire was administered one-on-one to IIL by a research assistant to ensure that they comprehended instructions and questions. Pictures were used as adjuncts to some of the questions on sexuality and HIV transmission. Different wordings were often used to provide for better understanding of sexuality terms. On average, the questionnaire administration lasted 25 minutes.

3.6.6.5 Focus Group Discussions

The facilitators utilised a FGD guide to explore information on awareness of HIV/AIDS, its transmission, sources of HIV/AIDS information, sexual behaviours, HIV risk perceptions, condom use and HIV testing among learners.

The groups were composed of persons of the same gender and of the same age range' and each comprised between six and ten ML and between four and five IIL. The discussions were held in venues where there would be no interruptions from teachers and other learners. Each group was facilitated by a research assistant of the same gender. Another research assistant, also of the same gender, acted as a note-taker. The facilitators were flexible in their use of language, mixing Yoruba and English, ensuring that participants felt free to express themselves in the manner in which they were most comfortable. They were also very friendly and did not assume the role of judgmental adults.

The facilitators started by introducing themselves and the note-takers. They then went on to explain the purpose of the study and the fact that the participants had been selected for the interview because they represented their friends/peers. To ensure the groups' dynamism, the participants were encouraged to relax and feel free to share what they knew about the topic. Each interactive session lasted between 50 minutes and 1 hour and was tape- or digitally-recorded with the permission of the participants.

To ensure participation of IIL, questions were directed to each of the group members in turn. The language was kept very simple. Questions were repeated with different wording to facilitate

understanding. Their understanding of sexuality issues was first explored through a series of questions and/or pictures before moving on to the actual questions.

Only five (three and two of the 15-19 and 12-14 age groups respectively) of the eight planned FGDs among IIL were conducted. On two occasions the learners did not respond appreciably, despite all efforts to get them to contribute. When the research assistants could not get through to them, the researcher had to take over but did not make appreciable progress, and only one person in the girls' groups talked while none of the boys were willing to participate in a FGD. The rest did not participate, despite all the strategies adopted, and we had to stop the session. Interestingly, this happened in the same school. Moreover, in another school we were only able to hold a session with the girls because there was little or no participation from the boys. Initially, at the beginning of the session, a boy was talking but later stopped, perhaps due to the fact that the others were not participating. An in-depth interview was later held with this boy and he responded well.

3.6.6.6 In-depth Interviews

Most of the learners interviewed were more comfortable speaking in Yoruba, so the interviews were largely conducted in Yoruba with only a few using a mixture of Yoruba and English. All in-depth interviews with IIL were also conducted purely in Yoruba because the participants were fluent and more comfortable using the language. The one-on-one interviews were facilitated by a 23-year-old male research assistant and the researcher, which ensured that the interviewers were of the same gender as the participants. The participants were made to feel relaxed by first engaging in introductions; the interviewer then introduced him/herself and asked about their welfare. The interviews were digitally-recorded, with the permission of the interviewees. Both interviewers were native Yoruba-speakers.

Pictures were used to supplement sexuality questions with IIL, to facilitate better understanding. Furthermore, simple language was used and questions were repeated in different ways until the facilitator was sure that the participants understood the questions. Most often, other unlisted

questions were first asked to explore their understanding of the concept at hand (particularly when it had to do with sexuality) before asking the relevant question.

The purpose of the study and confidentiality of information was explained to the participants prior to their participation in the interviews. It was believed that this would encourage them to talk freely and would result in little or no bias in their responses. The interviewer wrote field reports immediately after each interview to document how the session went. To ensure confidentiality, all sessions took place in a secluded place outside or inside classrooms in the absence of teachers. The duration of the interviews was between 10 and 22 minutes for IIL and 10 and 25 minutes for ML.

3.6.6.7 Key Informants Interviews

The interviews were conducted mainly in English by the researcher on a one-on-one basis with the selected teachers. First, the researcher tried to establish rapport by initially greeting teachers in Yoruba before opening up general discussions around special education and praising their efforts as special education teachers. After introductions had been made, the purpose of the interview was explained to them as well as the reason why they had been selected for the interviews. All sessions took place in secluded venues to ensure confidentiality of information, and permission was sought to digitally record the interview. One of the teachers of II learners refused to have the interview recorded, thus the researcher had to take notes during the interview instead. Field notes regarding the recorded interviews were written up immediately after the interviews. Each session lasted between 15 minutes and 1 hour.

3.6.7 Validity and reliability of instruments

In order to ensure the validity of the questionnaire, a few questions (especially about sexual practices) were repeated using different words, and answers were compared to see whether the questions were measuring what they intended to measure. Moreover, some of the questions were

validated by the responses derived from FGDs, in-depth and key informant interviews exploring the same topics.

To ensure the reliability, each of the data collection instruments was translated into Yoruba and then translated back into English by another Yoruba-speaking person before and after the pilot study. Necessary corrections were made to obtain a correct Yoruba version of the instruments. Furthermore, combination of quantitative and qualitative methods allowed for triangulation of methods in order to compare findings to determine whether they supported each other or not, particularly with regards to IIL.

To test reliability of the scales in the questionnaire, Cronbach's alpha values were computed after data collection for each of the measurement scales. The data was stratified into IIL and ML and Cronbach's alpha computed for each group of learners.

Raven's Progressive Matrices is a standardized test with retest reliabilities of between 0.83 and 0.93 when administered at one year intervals and internal consistency coefficients of 0.80 across a wide variety of cultural groups (Raven et al., 1998). Similarly, the DAP: IQ is a reliable test that employs a single drawing and was designed to represent a standardised and objective scoring system from which IQ can be derived from drawing a human figure (Reynolds & Hickman, 2004).

3.7 Data management and storage

A plan of action was developed listing the different activities to be carried out on a weekly basis. This was tailored to suit the school calendar and take account of public holidays. It also stated the persons to be involved in each activity and a time estimate for each stage.

The plan of action was divided into three stages:

- Consultations – this involved visits to the Oyo State Ministry of Education and the schools to consult with the stakeholders and participants, explain the purpose of the study, and obtain permission to conduct the study. Copies of a letter of approval for the study issued by the HIV/AIDS Desk of the Oyo State Ministry of Education, an

informational document for the school authority and two copies of written permission were given to each school's head teacher/ principal. After reading through the documents, the written permission was signed in duplicate, and the researcher retained a copy while the school head teacher/principal kept the other copy for school records. Apart from that, both schools (special and regular) in the Kajola educational zone had books where they recorded activities of visiting people to the schools. The researcher detailed her research activities in the schools' book and appended her signature. Once official permission had been granted to undertake the study in each school, a teacher was usually assigned to help coordinate the learners so that procedures could commence.

- Data collection – this stage took care of the logistics involved in the study.
 - Four trained research assistants and the researcher administered the psychometric tests and other research instruments
 - The researcher also acted as the field supervisor, coordinating and monitoring the activities of the research assistants
 - Arrangements were made for the research team to sleep in hotels when study sites were far from their homes
- Data handling
 - A face/cover sheet was prepared for each of the in-depth and key informant interview scripts; it stated the participant's code number, school, gender, age, class/level of education, and the interviewer's name. In addition, the group size and facilitator's name were indicated with FGDs. This served the purpose of providing good descriptions of the participants' characteristics
 - Each questionnaire was allocated a serial number
 - Questionnaires and copies of psychometric tests were distributed to research assistants (RAs) on a daily basis. Two questionnaires were given to RAs in addition to the number of questionnaires to be administered on a daily basis. Any uncompleted questionnaires were returned to the researcher at the end of the day. The researcher monitored the RAs closely to make sure that they complied with instrument administration procedures. It had also been agreed upon during

training that they would keep an eye on each other to make sure they did the right thing

- Collected data were coded and loaded on the researcher's personal computer. All completed questionnaires, psychometric tests and scripts were locked up in a safe for security, and to ensure confidentiality. The materials will be destroyed after five years of storage.

3.8 Data analysis techniques

3.8.1 Qualitative data

The qualitative data was analysed using interpretative phenomenological analysis (IPA). This method of analysis explores participants' experiences, giving an insider's perspectives, in relation to the phenomenon under study (Smith, 1996). The IPA elucidates what participants think or believe about the subject under discussion. It also recognises that the researcher's own conceptions, beliefs, expectations and experiences influence his/her interpretation of the participants' subjective experiences (Smith, Jarman, & Osborn, 1999). Willig (2001) argues that IPA requires the researcher to explicitly present his/her own perspectives, thereby illuminating the analysis. Therefore, IPA is considered both phenomenological (participants' accounts) and interpretative (researcher's interpretation of participants' accounts).

Because IPA studies seek to examine the detailed perceptions and understanding of specific groups studied rather than make general claims, they often make use of fairly homogenous samples. This type of sample need not be random or representative, and this justifies the use of purposive sampling in such studies.

Although this comparative study was undertaken in a state, it could be said to be fairly homogenous in that the participants had been exposed to the same educational procedures in the same part of Nigeria. The educational and teaching experiences of each group of learners were similar and being governed by the same rules and regulations. While some kind of randomisation

was attempted in the sampling used for the qualitative data collection, the sample could not be said to be homogenous because it consisted of only 12 participants in each of the groups studied.

Studies using IPA have documented its relevance in health psychology, especially with topics on HIV risk-related sexual behaviours and PWID (Flowers, Smith, Sheeran, & Beail, 1998; A. Mitchell, Cleg, & Furniss, 2006). It is thus applicable to this study.

Ten FGDs were transcribed verbatim by two of the research assistants, while the researcher transcribed all of the in-depth and key informant interviews and three FGDs verbatim. These were confirmed by another native Yoruba-speaker who listened to all of the recorded interviews and compared these with the scripts to see what areas had not been properly transcribed. His input was taken into consideration regarding the final scripts used for analysis.

For each of the qualitative methods, scripts were read and reread a number of times and texts were coded. These codes were later categorised into sub-themes. Connections were made between sub-themes so as to group them under specific superordinate themes. Further connections were made between the three different methods of data collection (FGDs, IdI and KII) to identify similar and different superordinate themes. The same was done for different groups of learners. A few themes emerged for one group which did not emerge for another group of learners. Similarly, different themes emerged for different methods of qualitative data collection. Eventually, the scripts were reduced to five superordinate themes that cut across all three of the methods of qualitative data collection used, as well as groups of learners in the study. In order to create a narrative that represented all of the categories in the sample, the researcher retained the groups from which each sub-theme was originally derived.

3.8.1.1 Triangulation of methods

Related superordinate themes were identified and compared using the data from FGDs, in-depth interviews, and key informant interviews and were used to interpret the findings. This gave a deeper meaning and understanding of the topic as it related to the two groups of learners. This

was also used to explain the findings of the quantitative data and thus provide a holistic picture of the situations under study.

3.8.1.2 Data triangulation

For each qualitative method, data from urban and less urban educational zones were compared for each group of learners in order to identify convergent and divergent themes. Similarly, data were compared between IIL and ML to identify convergent and/or divergent themes. All of these comparisons were used to analyse and interpret the findings from the study.

3.8.2 Quantitative data

Data from the structured questionnaire were coded and analysed using SPSS 15.0; the confidence interval was 95.0% and the level of statistical significance was taken to be $p < 0.05$.

3.8.2.1 Statistical data analysis

Hypothesis 1:

- There is no significant difference between IIL and ML in respect of HIV/AIDS awareness – H_0
- There is a significant difference between IIL and ML in respect of HIV/AIDS awareness – H_1

The independent variable was whether the learners were IIL or ML. Confounders were socio-economic status, gender, age, school location and other demographics. Bivariate analysis entailed Pearson's chi-square/Fisher's exact tests and t -tests to identify variables significantly associated with HIV awareness. A binary logistic regression model was used to assess the independent effect of groups of learners, while controlling for confounders. This was not successful because no ML had never heard of HIV/AIDS. Stratified analysis was then used to assess the differences in HIV awareness between the two groups.

Hypothesis 2:

- There is no significant difference between IIL and ML in respect of knowledge of transmission of HIV – H_0
- There is a significant difference between IIL and ML in respect of knowledge of transmission of HIV – H_1

The dependent variable was the knowledge score (quantitative). The scores were derived by computing the percentage of right responses given by each learner out of the nine items that measured learners' level of knowledge of HIV transmission. The independent variable of interest was whether the learners were IIL or ML as well as their exposure to HIV transmission information. Confounders were socio-economic status, gender, age, school location and other demographics. Bivariate analysis entailed Pearson's correlation analysis, *t*-tests and ANOVA tests to assess variables significantly associated with the knowledge score. A generalised linear regression model was used to assess the independent effect of group of learners on knowledge score while controlling for confounders.

Hypothesis 3:

- There is no significant difference between IIL and ML in respect of prevalence of sexual abstinence – H_0
- There is a significant difference between IIL and ML in respect of prevalence of sexual abstinence – H_1

The dependent variable was the risk perception score (quantitative score from 3-point scale items). The independent variable of interest was whether the learners were IIL or ML. The confounders were abstinence, HIV knowledge, risk behaviours, socio-economic status, school location and other demographics. Bivariate analysis was done by means of *t*-tests, Pearson's correlation and ANOVA tests to assess variables significantly associated with the perceived risk score. Factors identified as significantly associated with risk perception were evaluated in a generalised linear regression model, while controlling for confounders.

Hypothesis 4:

- There are no significant differences between IIL and ML in respect of risky sexual behaviours – H_0
- Significant differences exist between IIL and ML in respect of risky sexual behaviours – H_1

The dependent variables were the six risky sexual exposures defined in the operational definitions (binary) and these were restricted to the sexually active participants. The independent variable of interest was whether the learners were IIL or ML. The confounders were HIV knowledge, demographics (including gender), socio-economic status, school location, substance use, and religion. Each risky sexual exposure was analysed separately. Bivariate analysis entailed Pearson's chi-square tests to identify variables significantly associated with each risky sexual exposure. A binary logistic regression model was used to assess the independent effect of groups of learners, while controlling for confounders.

Hypothesis 5:

- There is no significant difference between IIL and ML in respect of perceived risk of HIV infection – H_0
- A significant difference exists between IIL and ML in respect of perceived risk of HIV infection – H_1

The dependent variable was sexual abstinence (binary variable). The independent variable of interest was whether the learners were IIL or ML. Confounders included having boy/girlfriends, HIV knowledge, demographics (including gender), socio-economic status, substance use, school location and religion. Bivariate analysis entailed Pearson's chi-square tests and *t*-tests to identify variables significantly associated with sexual experience. A binary logistic regression model was used to assess the independent effect of groups of learner, while controlling for confounders.

To test the relevance of the I-Change Model in predicting sexual abstinence among IIL, the dependent variable was sexual abstinence; the independent variables were the predisposing, awareness, informational and motivational factors, as well as intention, in the I-Change Model. Confounders included having boy/girlfriends, HIV knowledge, demographics (including gender), socio-economic status, substance use, school location and religion. A binary logistic regression

analysis was used to assess the independent effects of all the factors in predicting abstinence in IIL, while controlling for confounders.

The I-Change Model assumes that most of the influences behind risk perceptions, attitudes, social influences and self-efficacy will be mediated through intention. Therefore, the model was tested using a stepwise approach to analyse which demographic, awareness (risk perceptions, cue to action, outcome expectations, knowledge) and motivational (attitudes, social influences, self-efficacy) variables, along with intention, were associated with sexual abstinence. In addition, backward logistic regression analysis was used to investigate which variables contributed to explaining whether reported sexual abstinence was related to these constructs or not.

3.8.3 Psychological measures analyses

For the DAP: IQ, each learner's drawing was scored based on the criteria provided for each of the 23 items according to the test manual (Reynolds & Hickman, 2004). The raw scores were summed. The average raw score was separately computed for each age group of ML and IIL to make comparison easier. The total/composite score was derived for each learner on CPM and SPM. The average composite scores were computed for each age group. Analysis of Vineland's Social Maturity Scale involved determining the age at which the learner is functioning.

3.9 Ethical considerations

Ethical clearance was obtained for the study from the Biomedical Research Ethical Committee of the University of KwaZulu-Natal. Written permission to carry out the study was also obtained from the Oyo State Ministry of Education, Nigeria. In addition, the school principals/head teachers gave written permission to undertake the study in their various schools.

Documentation about the study and a request for permission to have learners participate in the study were sent to parents via the learners. Parents were asked to indicate if they didn't want their wards to participate in the study. Prior to this, Parents Teachers Association meetings were held during which the researcher informed the parents about the study, and it was agreed on that

the document should be sent to them through the learners. Learners were not recruited if parents indicated that they objected to their participation. Furthermore, participants were given documentation about the study and informed consent was obtained from all of them before they were recruited. Learners with intellectual impairment were guided through an informed consent procedure (Appendix A) that had been proven by G. Thomas and Kroese (2005) to be appropriate for them. IIL were not included in the study if they demonstrated lack of understanding of what the study was about or did not agree to participate. Arrangements were put in place to cater for learners that may have become traumatised as a result of sharing experiences about ongoing sexual abuse during the course of the study, but no such cases arose. Learners that refused to participate in the study were not penalised and in no way were they denied access to the research findings. All participants and parents were informed that the findings of the study will be disseminated.

The purpose of the study was communicated to participants of FGDs, in-depth and key informant interviews, and the need for confidentiality about issues discussed in FGDs was emphasised to the group members. To ensure confidentiality of information, participants were not identified by their real names in any of the reports that emanated from the study. Participants were informed of their right not to participate if they did not want to and that interviews and discussions did not have to be recorded if they were uncomfortable with this. As a result, one key informant interview was not recorded; one FGD did not hold because learners were not cooperative/interested and an IIL refused to be interviewed.

To protect the integrity of the psychometric test items and scoring procedures, all tests were administered and controlled in accordance with the applicable ethical and professional code. Tests were not divulged to the public, and were kept under lock and key. Only the research assistants and the researcher had access to them. All scorings and interpretations were overseen by the researcher's supervisor, who is a clinical psychologist.

3.10 Research dissemination

A summary of the major findings of the research was made available (in printed form) to all of the schools that participated, as well as to the Oyo State Ministry of Education. Efforts were also made to clarify issues, answer questions, and educate participants on sexuality and HIV/AIDS issues in accessible formats during and after data collection.

3.11 Conclusion

This cross-sectional, comparative study utilised mixed methods to collect data on HIV/AIDS knowledge, attitudes and sexual practices among IIL and ML aged 12-19 in special and regular schools in Oyo State, Nigeria. The use of mixed methods is capable of giving a better picture of the findings. Data from teachers also provided independent information from relevant stakeholders.

CHAPTER FOUR

RESULTS

4.1 Introduction

The results of the data analysis are presented in this chapter. This includes findings from the psychological measures, structured questionnaire, and the qualitative measures – FGDs, key informant and in-depth interviews. It closes by presenting the results of testing the relevance of the I-Change Model in predicting sexual abstinence among learners with intellectual impairment.

4.2 Psychological measures

The intellectual functioning levels of the participants were established using the following psychological measures:

4.2.1 Draw-A-Person intellectual ability test for children, adolescents, and adults (DAP:IQ)

Mainstream learners scored higher than intellectually impaired learners in Draw-A-Person (Table 4.1).

4.2.2 Raven's Progressive Matrices

Mean scores of ML and II learners on SPM and CPM respectively were presented in Table 4.2. For comparisons, CPM mean scores were converted to equivalent SPM scores. Intellectually impaired learners scored less than mainstream learners in Raven's Progressive Matrices (see Table 4.2). In addition, Tables 4.3 and 4.4 present the percentile scores of learners on SPM and CPM respectively

4.2.3 Vineland's Social Maturity Scale

The 8 learners were functioning below their chronological ages (Table 4.5)

Table 4.1

Mean scores of learners in Draw-A-Person

Age	ML		IIL	
	<i>n</i>	mean (SD)	<i>n</i>	mean (SD)
12	26	25.58 (6.09)	26	7.42 (4.10)
13	31	24.90 (6.70)	23	9.26 (5.75)
14	48	23.96 (7.10)	23	8.48 (6.60)
15	58	25.88 (6.60)	40	7.38 (3.74)
16	48	22.90 (6.70)	36	8.00 (4.26)
17	37	23.60 (6.51)	40	8.93 (6.98)
18	20	27.90 (5.26)	44	7.70 (4.08)
19	19	24.74 (9.09)	60	8.07 (4.93)
Total	287	24.69 (6.82)	292	8.10 (5.06)

Table 4.2**Mean scores of learners in CPM and SPM**

Age	ML		IIL		SPM equivalent mean score for IIL
	<i>n</i>	mean (SD)	<i>n</i>	mean (SD)	
12	26	27.58 (11.14)	26	20.35 (3.45)	20.35
13	31	25.42 (12.06)	23	18.65 (4.03)	17.65
14	52	30.10 (11.63)	25	19.16 (3.42)	19.16
15	67	32.13 (10.52)	41	18.29 (4.19)	17.29
16	51	30.02 (10.27)	36	20.53 (3.92)	20.53
17	38	31.00 (9.65)	42	19.60 (4.52)	19.60
18	20	32.45 (6.72)	45	18.31 (3.49)	17.31
19	21	24.48 (9.98)	62	19.61 (4.52)	19.61
Total	306	29.72 (10.73)	300	19.30 (4.08)	19.30

Table 4.3**SPM Percentile Scores for ML**

Percentile points	Chronological age in years								
	12	13	14	15	16	17	18	19	
95	44	48	50	51	46	45	44	43	
90	42	43	47	45	43	43	43	39	
75	37	36	40	40	38	39	37	31	
50	30	22	29	34	31	31	32.5	26	
25	17	15	21	25	22	27	28.5	14	
10	12	11	15	16	13	15	24	11	
5	11	10	13	14	13	12	15.5	10	
<i>n</i>	26	31	52	67	51	38	20	21	

Table 4.4**CPM Percentile Scores for IIL**

Percentile points	Chronological age in years							
	12	13	14	15	16	17	18	19
95	28	28	28	28	27	29	26	26
90	26	26	23	27	27	26	23	26
75	22	20	21.5	20	24	24	20	22
50	20	17	18	17	20	18	17	20
25	18	15	17	15	17	16	15.5	17
10	15	15	16	15	15	15	15	15
5	15	15	15	13	15	15	15	15
<i>n</i>	26	23	25	41	36	42	45	62

Table 4.5**Level of intellectual functioning of learners**

Learner	Gender	Chronological age (yrs)	Mental age on Vineland's (yrs)
1	Male	14	9-10
2	Female	18	9-10
3	Female	18	6-7
4	Female	15	6-7
5	Female	13	9-10
6	Male	19	7-8
7	Male	15	7-8
8	Male	19	9-10

4.3 General descriptions of the sample

4.3.1 Demographics

Three hundred IIL (49.5%) and 306 ML (50.5%) attempted and returned the questionnaire. Six questionnaires from ML were discarded because they were incomplete. The final analysis was based on completed questionnaires from 300 IIL (50.0%) and 300 ML (50.0%). There was a significant difference, $t(598) = 5.61$; $p < 0.001^a$; $d = 0.97$, between the mean age of IIL (16.3) and ML (15.3). As shown in Table 4.6, there was a tendency for IIL (228, or 52.8%) to be better represented than ML in the age group of 15-19. Similarly, 147 (79.0%) of learners in alternative living arrangements (not living with a father and mother) had intellectual disability. Of the IIL, 123 (41.0%) were females and 177 (59.0%) males, whereas 154 (51.3%) and 146 (48.7%) of the ML were females and males, respectively. Yoruba was the language spoken at home by 506 (84.3%) of the learners. Most of the learners were either Christians (327, or 54.5%) or Muslims (271, or 45.2%).

4.2.2 Socio-behavioural characteristics

Sixty-one (77.2%) of the sexually experienced IIL could not remember when they had last had sex. Of the learners that reported sexual activity in the last six months, 18 (37.5%) and 30 (62.5%) were IIL and ML, respectively. Of the learners that reported having boy/girlfriends, 69 (37.7%) were IIL compared to almost two thirds (114, or 62.3%) that were ML. The age range for their first sexual experience was 7-19. Most (44, or 64.7%) of the learners (both IIL and ML) reportedly first had sexual intercourse between the ages of 13 to 16 years (Figure 4.1). Twenty-nine (78.4%) of learners that reported that their first sexual partner was much older had intellectual impairment (see Table 4.7). All IIL (29, or 100.0%) who reported that their first sexual partner had been much older were female but an equal number (4, or 50.0%) of ML males and females reported that their first sexual partners had been much older. Of the learners who reported being sexually active, 30 (62.5%) were ML and 18 (37.5%) were IIL.

^a Two-tailed

Table 4.6**Demographics of learners**

Variable	ML <i>n</i> (%)	III <i>n</i> (%)	Total <i>n</i> (%)
Sex			
Male	146 (45.2)	177 (54.8)	323 (100.0)
Female	154 (55.6)	123 (44.4)	277 (100.0)
Age group			
12-14	96 (57.1)	72 (42.9)	168 (100.0)
15-19	204 (47.2)	228 (52.8)	432 (100.0)
Religion			
Christianity	141 (43.1)	186 (56.9)	327 (100.0)
Islam	157 (57.9)	114 (42.1)	271 (100.0)
Others	2 (100.0)	0 (0.0)	2 (100.0)
Language			
Yoruba	222 (43.9)	284 (56.1)	506 (100.0)
English	57 (85.1)	10 (14.9)	67 (100.0)
Ibo	15 (75.0)	5 (25.0)	20 (100.0)
Others	6 (85.7)	1 (14.3)	7 (100.0)
Living arrangement			
Both parents	226 (70.0)	97 (30.0)	323 (100.0)
One parent	35 (38.5)	56 (61.5)	91 (100.0)
Alternative arrangement	39 (21.0)	147 (79.0)	186 (100.0)

Table 4.7**Socio-behavioural characteristics of learners**

Variable	ML <i>n</i> (%)	IIL <i>n</i> (%)	Total <i>n</i> (%)
Had a boy/girlfriend			
No	186 (44.6)	231 (55.4)	417 (100.0)
Yes	114 (62.3)	69 (37.7)	183 (100.0)
Age initiation sex (yrs)			
Below 13	9 (69.2)	4 (30.8)	13 (100.0)
13-16	32 (72.7)	12 (27.3)	44 (100.0)
17-19	7 (63.6)	4 (36.4)	11 (100.0)
Can't remember	0 (0.0)	59 (100.0)	59 (100.0)
Age of 1 st sexual partner			
Peer	27 (38.0)	44 (62.0)	71 (100.0)
A bit older	13 (68.4)	6 (31.6)	19 (100.0)
Much older	8 (21.6)	29 (78.4)	37 (100.0)
Last time of sexual activity			
Within last 6 months	30 (62.5)	18 (37.5)	48 (100.0)
Over 6 months	12 (100.0)	0 (0.0)	12 (100.0)
Over 1 year	1 (100.0)	0 (0.0)	1 (100.0)
Can't remember	5 (7.6)	61 (92.4)	66 (100.0)

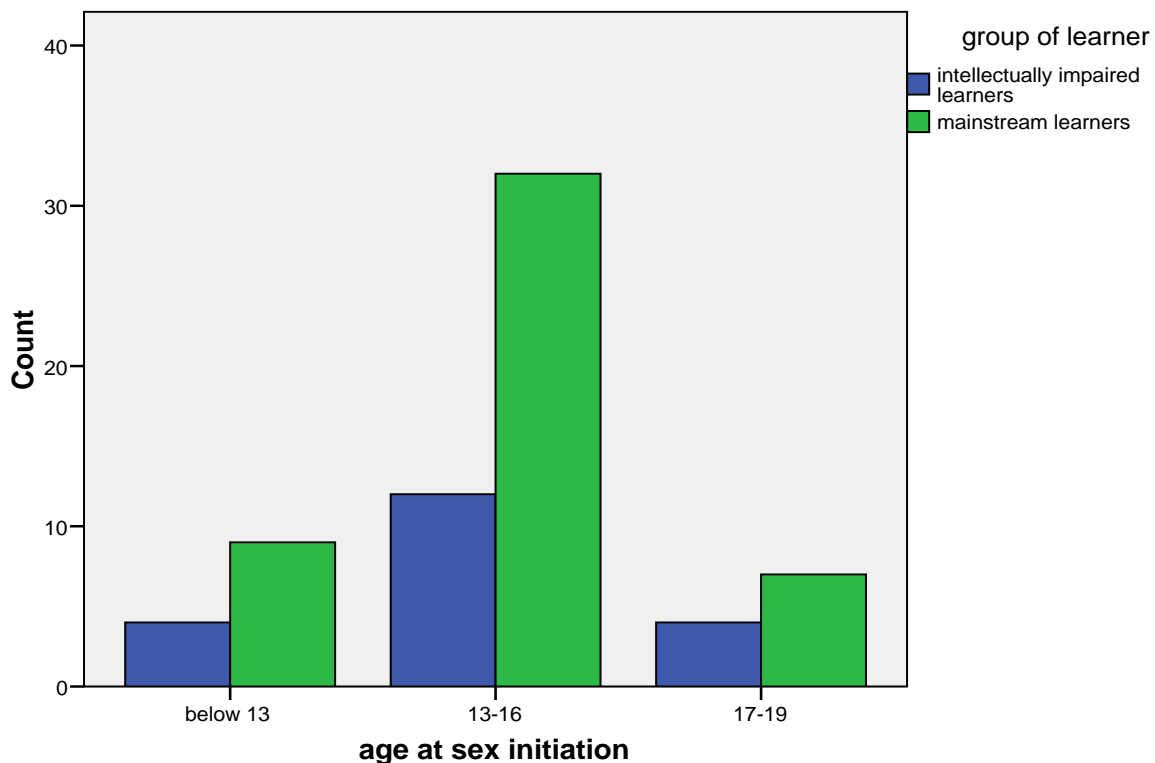


Figure 4.1: Trends of age at sex initiation for ML and IIL

4.4 Results using quantitative method

4.4.1 HIV/AIDS awareness of learners

Learners with intellectual impairment were significantly less likely to have heard of HIV/AIDS than ML, $\chi^2(1) = 27.18$; $p < 0.001$. Therefore, the null hypothesis was rejected. Learners with intellectual impairment in both 12-14 years ($p = 0.002^b$) and 15-19 years, $\chi^2(1) = 17.78$; $p < 0.001$, age groups were less aware of HIV/AIDS than ML (Table 4.8). The results also indicated that within the female, $\chi^2(1) = 22.68$; $p < 0.001$, and male ($p = 0.005^b$) groups, IIL were significantly less aware of HIV/AIDS than ML. Similarly, within the Christian, $\chi^2(1) = 16.15$; $p < 0.001$, and Muslim ($p = 0.005^b$) groups, IIL were less aware of HIV/AIDS than the non-disabled group. Additionally, within groups of learners attending schools in urban, $\chi^2(1) = 13.27$;

^b Fisher's exact test

$p < 0.001$, and in less urban ($p < 0.001^b$) areas, IIL were significantly less aware of HIV/AIDS than their mainstream counterparts. Among the Yoruba-speaking learners, those with intellectual impairment demonstrated significantly less awareness of HIV/AIDS compared to ML, $\chi^2 (1) = 21.43$; $p < 0.001$.

Furthermore, IIL who reported not having boy/girlfriends, $\chi^2 (1) = 21.41$; $p < 0.001$, and sexual inexperience, $\chi^2 (1) = 25.06$; $p < 0.001$, were significantly less likely to have heard of HIV/AIDS than inexperienced mainstream learners without boy/girlfriends. Intellectually impaired and mainstream learners who reported having boy/girlfriends ($p = 0.377^b$) and those that reported sexual experience ($p = 0.156^b$) did not differ significantly in their levels of HIV/AIDS awareness.

Table 4.8

Differences in HIV/AIDS awareness of IIL and ML in respect of age groups, sex, religion, have boy/girlfriend, language and sexual experience

Variable	ML		Total <i>n</i> (%)	IIL		Total <i>n</i> (%)	<i>p</i> -value
	Ever heard of HIV/AIDS			Ever heard of HIV/AIDS			
	No <i>n</i> (%)	Yes <i>n</i> (%)		No <i>n</i> (%)	Yes <i>n</i> (%)		
Age group (yrs)							
12-14	0 (0.0)	96 (100.0)	96 (100.0)	7 (9.7)	65 (90.3)	72 (100.0)	0.002*
15-19	0 (0.0)	204 (100.0)	204 (100.0)	19 (8.3)	209 (91.7)	228 (100.0)	<0.001
Sex							
Female	0 (0.0)	154 (100.0)	154 (100.0)	17 (13.8)	106 (86.2)	123 (100.0)	<0.001
Male	0 (0.0)	146 (100.0)	146 (100.0)	9 (5.1)	168 (94.9)	177 (100.0)	0.005
Religion							
Christianity	0 (0.0)	141 (100.0)	141 (100.0)	20 (10.8)	166 (89.2)	186 (100.0)	<0.001
Islam	0 (0.0)	157 (100.0)	157 (100.0)	6 (5.3)	108 (94.7)	114 (100.0)	0.005*
Others		2 (100.0)	2 (100.0)				
Have a boy/girlfriend							
No	0 (0.0)	186 (100.0)	186 (100.0)	25 (10.8)	206 (89.2)	231 (100.0)	<0.001
Yes	0 (0.0)	114 (100.0)	114 (100.0)	1 (1.4)	68 (98.6)	69 (100.0)	0.377*
Sexual experience							
No	0 (0.0)	252 (100.0)	252 (100.0)	21 (9.5)	200 (90.5)	221 (100.0)	<0.001
Yes	0 (0.0)	48 (100.0)	48 (100.0)	5 (6.3)	74 (93.7)	79 (100.0)	0.156*
Language							
Yoruba	0 (0.0)	222 (100.0)	222 (100.0)	26 (9.2)	258 (90.8)	284 (100.0)	<0.001
School location							
Urban	0 (0.0)	161 (100.0)	161 (100.0)	19 (7.9)	223 (92.1)	242 (100.0)	<0.001
Less urban	0 (0.0)	139 (100.0)	139 (100.0)	7 (12.1)	51 (87.9)	58 (100.0)	<0.001*

p-value: Pearson's Chi-Square

*Fisher's exact test

4.4.2 HIV transmission knowledge of learners

The knowledge scores for all learners ranged between 0.0% and 100.0%, with a mean score of 61.6%. Bivariate analysis showed that being intellectually impaired was significantly associated with lower HIV knowledge scores, $t(598) = -10.07$; $p < 0.001^c$; $d = -17.59$. As a result, the alternative hypothesis was accepted. Learners with intellectual impairment were also significantly more likely to hold inaccurate beliefs regarding the transmission of HIV (believing that it could be transmitted through kissing, or sharing a toilet or cup) than their non-disabled peers, $t(598) = 2.64$; $p = 0.009^d$; $d = 0.25$.

There were no significant differences between learners' religious beliefs, $p = 0.112$, gender, $p = 0.368^d$; school location, $p = 0.066^d$; age, $p = 0.075$, and their HIV transmission knowledge (Table 4.9).

Although a few of the independent variables in the generalised linear regression model were significant (Table 4.10), the results were not reported because the model fit was not good, as indicated by the deviance/ df (420.10) and Pearson's chi-square/ df (420.10) values. This could have been due to multi-collinearity in the independent variables. Moreover, generalised linear regression assumes homoskedasticity whereas the cross-sectional nature of the study made it prone to heteroskedasticity.

^c Two-tailed

^d Two-tailed

Table 4.9**Bivariate analysis of HIV transmission knowledge scores of learners**

Variable	HIV transmission knowledge	
	<i>M (SD)</i>	<i>p</i> -value
Groups of learner ^a		
Intellectually impaired	52.85 (24.73)	<0.001
Mainstream learners	70.44 (17.42)	
Sex ^a		
Female	60.73 (24.01)	0.368
Male	62.44 (22.33)	
School location ^a		
Urban	60.44 (23.42)	0.066
Less urban	64.13 (22.35)	
Religion ^b		
Christianity	60.00 (24.15)	0.112
Islam	63.51 (21.65)	
Other	77.78 (31.42)	
Wrong transmission ^a		
Intellectually impaired	1.38 (1.17)	0.009
Mainstream learners	1.13 (1.12)	
Age (yrs) ^c	<i>r</i> = -0.073	0.075

^a *t*-test^b ANOVA^c Pearson's correlation**Table 4.10****Predictors of HIV transmission knowledge scores from generalised linear regression models of groups of learner, HIV information sources, school location, age, sex, and religion of respondents**

Variable	Model			
	β (<i>SE</i>)	χ^2 (1)	95% <i>CI</i>	<i>p</i> -value
Groups of learner				
ML vs. IIL	18.38 (1.76)	109.06	14.93, 21.82	<0.001
School location				
Urban vs. less urban	1.06 (1.86)	0.32	-2.60, 4.71	0.571
Sources of HIV info.				
Radio	9.10 (1.87)	23.63	5.43, 12.76	<0.001
Television	5.82 (1.78)	10.63	2.32, 9.32	0.001
Others (neighbours)	15.35 (5.28)	8.46	5.01, 25.70	0.004

4.4.3 HIV risk perception of learners

The HIV risk perception scores for learners ranged from 3 to 9, with a mean of 6.5. From the bivariate analysis, a high HIV risk perception score was significantly associated with not having intellectual impairment, $t(598) = -6.33$; $p < 0.001^e$; $d = -0.98$, having a boy/girlfriend, $t(598) = -4.22$; $p < 0.001^e$; $d = -0.72$, a high HIV knowledge score, $r = 0.215$; $p < 0.001^e$, and the age of the learners, $r = -0.113$ $p = 0.005^e$. Due to the significant association observed between HIV risk perception and intellectual impairment, the null hypothesis was thus rejected. However, the association between the HIV risk perception score and school location was nearing significance, $t(598) = 1.94$; $p = 0.053^e$; $d = 0.33$ (Table 4.11).

However, as shown in Table 4.12, after controlling for confounders in the generalised linear model, the effect of age as a predictor of the HIV risk perception score was poorly significant ($\beta = -0.07$; $CI = -0.14, 0.00$; $p = 0.052$) and that of school location became non-significant ($\beta = -0.02$; $CI = -0.35, 0.31$; $p = 0.917$). Additionally, learners' HIV/AIDS risk perception scores decreased significantly when they had an alternative living arrangement versus living with both parents ($\beta = 0.43$; $CI = -0.80, -0.06$; $p = 0.023$). The results of the generalised linear model were reported in this case because the model fit was better, based on the deviance/ df (3.44) and the Pearson's chi-square/ df (3.44) values. However, heteroskedasticity could not be ruled out. There were no significant differences between learners' HIV/AIDS risk perception based on their gender, language, religious beliefs, and sexual experience (Table 4.11).

^e Two-tailed

Table 4.11**Bivariate analysis of HIV risk perception scores of learners**

Variable	HIV risk perception <i>M (SD)</i>	<i>p</i> -value (<i>t</i> -test)
Groups of learner		
Intellectually impaired	6.03 (2.06)	< 0.001
Mainstream learners	7.01 (1.71)	
Sex		
Female	6.52 (1.95)	0.999
Male	6.52 (1.97)	
Religion ^a		
Christianity	6.40 (1.98)	0.175
Islam	6.64 (1.92)	
Other	8.00 (1.41)	
Have a boy/girlfriend		
No	6.30 (1.99)	< 0.001
Yes	7.02 (1.79)	
Sexual experience		
No	6.49 (1.90)	0.508
Yes	6.62 (2.16)	
School location		
Urban	6.41 (2.00)	0.053
Less urban	6.74 (1.85)	
Language ^a		
English	6.66 (1.88)	0.774
Ibo	6.85 (2.32)	
Yoruba	6.49 (1.96)	
Other	6.71 (1.50)	
Knowledge score ^b	<i>r</i> = 0.215	< 0.001
Age (yrs) ^b	<i>r</i> = -0.113	0.005

^a ANOVA ^b Pearson's correlation

Table 4.12

Predictors of HIV risk perception from generalised linear models of group, living arrangements, having a boy/girlfriend, school location, knowledge score, and age of learners

Variable	Model			
	β (SE)	χ^2 (1)	95% CI	p-value
Groups of learner				
ML vs. IIL	0.43 (0.19)	5.10	0.06, 0.80	0.024
Living arrangement				
Alternative vs. both parents	-0.43 (0.19)	5.19	-0.80, -0.06	0.023
One parent vs. both parents	-0.28 (0.23)	1.49	-0.72, 0.17	0.222
Have a boy/girlfriend				
Yes vs. no	0.60 (0.17)	12.80	0.27, 0.93	<0.001
School location				
Urban vs. less urban	-0.02 (0.17)	0.01	-0.35, 0.31	0.917
Knowledge score (%)	0.01 (0.00)	11.75	0.01, 0.02	0.001
Age (yrs)	-0.07 (0.04)	3.79	-0.14, 0.00	0.052

4.4.4 Risky sexual exposures among learners

4.4.4.1 *Inconsistent condom use with boy/girlfriends*

The significant association between inconsistent condom use with boy/girlfriends and intellectual disability in the bivariate analysis, χ^2 (1) = 43.80; $p < 0.001$, disappeared after controlling for confounders in the multivariate analysis. The alternative hypothesis was therefore rejected regarding inconsistent condom use with boy/girlfriends as a risky sexual exposure among learners. In addition, none of the IIL reported consistent condom use with boy/girlfriends.

From the multivariate analysis, female gender ($p = 0.008$) and Christianity ($p = 0.003$) were significantly associated with inconsistent use of condoms with boy/girlfriends. The odds ratio (OR) of inconsistent condom use with boy/girlfriends among Christians versus Islamic persons (5.83) and girls versus boys (5.03) was high (Table 4.13). Inconsistent condom use with

boy/girlfriends increased significantly with a decrease in HIV transmission knowledge scores ($p = 0.009$).

Table 4.13

Predictors of inconsistent condom use with boy/girlfriend from binary logistic regression model of sex, religion, language, have a boy/girlfriend, knowledge, risk perception, and age group of learners

Variable	Model			
	β (SE)	OR	95% CI	p-value
Female	1.62 (0.61)	5.03	1.54, 16.48	0.008
Christianity	1.76 (0.59)	5.83	1.85, 18.39	0.003
Knowledge	-0.04 (0.02)	0.96	0.93, 0.99	0.009

4.4.4.2 Inconsistent condom use with casual sexual partners

The relationship between inconsistent condom use with casual sexual partners and intellectual impairment increased significantly ($p < 0.001$), whereas a poor significance existed between inconsistent condom use with casual partners and low HIV risk perception scores ($p = 0.056$). The null hypothesis with regards to inconsistent condom use with casual sexual partners as a risky sexual exposure was rejected because the former result indicated a significant relationship between having intellectual impairment or not and inconsistent condom use with casual sexual partners. Table 4.14 shows that there was no significant association between inconsistent condom use with casual sexual partners and having no boy/girlfriend ($p = 0.079$).

Table 4.14

Predictors of inconsistent condom use with casual sexual partners from binary logistic regression model of sex, religion, language, have a boy/girlfriend, knowledge, risk perception, age group, and group of learners

Variable	Model			
	β (SE)	OR	95% CI	p-value
Have no boy/girlfriend	1.30 (0.74)	3.67	0.86, 15.71	0.079
Risk perception	-0.31 (0.16)	0.73	0.53, 1.00	0.056
Intellectually impaired	3.01 (0.69)	20.24	5.29, 77.45	<0.001

4.4.4.3 Condom use during last sexual activity

Learners with intellectual impairment ($p < 0.001$) and learners with higher HIV transmission knowledge scores ($p = 0.006$) were significantly less likely to have used condoms during their last reported sexual activity (Table 4.15). The former indicated the existence of a significant association between being intellectually impaired or not and condom use during last sexual activity. The null hypothesis was then rejected with regards to condom use during last sexual activity as a risky sexual exposure. A low HIV risk perception score was not significantly associated with non-use of condoms during last sexual activity ($p = 0.073$).

Table 4.15

Predictors of no condom use at last sexual activity from binary logistic regression model of group, sex, knowledge, risk perception, religion and age group of learners

Variable	Model			
	β (SE)	OR	95% CI	p-value
Intellectually impaired	3.05 (0.73)	21.03	4.99, 88.58	<0.001
Knowledge scores	0.05 (0.02)	1.05	1.01, 1.09	0.006
Risk perception	-0.26 (0.15)	0.77	0.58, 1.03	0.073

4.4.4.4 Multiple sexual partners

As shown in Table 4.16, learners who sometimes/rarely had multiple sexual partners were significantly more likely to be intellectually impaired ($p = 0.020$) and had low HIV risk perception ($p = 0.002$). The null hypothesis was rejected with regards to multiple sexual partners as a risky sexual exposure. However, 20.3% of IIL reported having had multiple sexual partners (Table 4.19).

Table 4.16

Predictors of sometimes/rarely having multiple sexual partners from binary logistic regression model of sex, religion, language, have a boy/girlfriend, knowledge, risk perception, age group and group of learners

Variable	Model			
	β (SE)	OR	95% CI	p-value
Risk perception	-3.74 (0.12)	0.69	0.55, 0.87	0.002
Intellectually impaired	0.99 (0.42)	2.68	1.17, 6.16	0.020

4.4.4.5 Number of sexual partners in the last six months

No significant association existed between the number of sexual partners in the last six months and whether learners had intellectual impairment or not, $\chi^2(1) = 3.38$; $p = 0.066$, although the trend indicated that ML (18, or 56.3%) were more likely to have had more than one sexual partner than IIL (19, or 35.8%). The alternative hypothesis regarding number of sexual partners in the last six months as a risky sexual exposure was thus rejected. Males ($p = 0.014$) were three times significantly more likely than females to have reported more than one sexual partner in the last six months (Table 4.17). As risk perception scores increased, so did the likelihood of having had more than one sexual partner ($p = 0.017$).

Table 4.17

Predictors of having more than one sexual partner in the last six months from binary logistic regression model of group, age, sex, knowledge, risk perception and religion of learners

Variable	Model			
	β (SE)	OR	95% CI	p-value
Male	1.17 (0.48)	3.21	1.26, 8.14	0.014
Risk perception	0.28 (0.12)	1.32	1.05, 1.66	0.017

4.4.4.6 History of rape

A history of rape was higher, but poorly significant, among females with intellectual disability compared to female mainstream learners ($\chi^2(1) = 3.73$; $p = 0.053$) in the bivariate analysis (Table 4.19). However, after controlling for confounders in the logistic regression analysis, intellectual impairment was found to be a predictor of rape in girls. As shown in Table 4.18, girls with intellectual disability were almost four times significantly more likely to have reported a history of rape than non-disabled girls ($p = 0.041$). Therefore, the null hypothesis regarding

history of rape as a risky sexual exposure was rejected for girls only. Generally, learners who were female ($\beta = 2.28$; $OR = 9.80$; $CI = 3.82, 25.15$; $p < 0.001$), older ($\beta = 0.25$; $OR = 1.29$; $CI = 1.01, 1.64$; $p = 0.040$) and had higher HIV transmission knowledge scores ($\beta = 0.03$; $OR = 1.03$; $CI = 1.01, 1.06$; $p = 0.008$) were significantly more likely to have reported a history of rape.

Table 4.18

Predictors of history of rape in girls from binary logistic regression model of have a boyfriend, knowledge, risk perception, group and age of learners

Variable	Model			
	β (<i>SE</i>)	<i>OR</i>	95% <i>CI</i>	<i>p</i> -value
Intellectually impaired	1.31 (0.64)	3.71	1.06, 13.01	0.041
Knowledge	0.03 (0.02)	1.03	1.00, 1.07	0.087
Age	0.31 (0.16)	1.37	1.00, 1.87	0.052

Table 4.19**Bivariate analysis of group of learners by risky sexual exposures**

Variable	IIL <i>n</i> (%)	Total <i>n</i> (%)	ML <i>n</i> (%)	Total <i>n</i> (%)	<i>p</i> -value
Condom use with boy/girlfriend					
Always/Often	0 (0.0)		22 (45.8)		
Sometimes/Rarely	79 (100.0)	79 (100.0)	26 (54.2)	48 (100.0)	<0.001
Condom use with casual sexual partners					
Always/Often	3 (3.8)		20 (41.7)		
Sometimes/Rarely	76 (96.2)	79 (100.0)	28 (58.3)	48 (100.0)	<0.001
Multiple sexual partners					
Always/Often	16 (20.3)		21 (43.8)		
Sometimes/Rarely	63 (79.7)	79 (100.0)	27 (56.3)	48 (100.0)	0.005
Condom use at last sexual activity					
No	62 (78.5)		28 (58.3)		
Yes	4 (5.1)	66 (100.0)	19 (39.6)	47 (100.0)	<0.001
No of sexual partners in the last 6 months					
1	34 (64.2)		14 (3.8)		
>1	19 (35.8)	53 (100.0)	18 (56.3)	32 (100.0)	0.066
Ever been raped					
<i>Female</i>					
No	13 (31.7)		12 (57.1)		
Yes	28 (68.3)	41 (100.0)	9 (2.9)	21 (100.0)	0.053
<i>Male</i>					
No	34 (89.5)		21 (77.8)		
Yes	4 (10.5)	38 (100.0)	6 (22.2)	27 (100.0)	0.198

4.4.5 Substance use

Twenty-three (74.2%), 9 (75.0%) and 2 (33.3%) of the learners that reported occasional use of alcohol, cigarettes and marijuana, respectively, had intellectual impairment (Table 4.20). Furthermore, there were no significant differences between the number of sexual partners in the last six months and the use of cigarettes ($\chi^2 (2) = 4.03$; $p = 0.133^f$), alcohol ($\chi^2 (2) = 3.72$; $p = 0.156^f$), marijuana ($p = 0.187^g$) and other hard drugs ($p = 0.435^g$), as indicated in Table 4.21. Moreover, in Table 4.22 no significant association existed between condom use during last sexual activity and the use of cigarettes ($\chi^2 (3) = 1.62$; $p = 0.655^f$), alcohol ($\chi^2 (2) = 3.43$; $p = 0.180^f$), marijuana ($p = 1.000^g$) and other hard drugs ($p = 1.000^g$).

Table 4.20

Substance use among learners

Variable	ML <i>n</i> (%)	IIL <i>n</i> (%)	Total <i>n</i> (%)	<i>p</i> -value
Alcohol				
Daily	3 (0)	0 (0.0)	3 (100.0)	0.005
Occasionally	8 (25.8)	23 (74.2)	31 (100.0)	
Don't use	289 (51.1)	277 (48.9)	566 (100.0)	
Cigarettes				
During the weekends	1 (100.0)	0 (0.0)	1 (100.0)	0.108
Daily	0 (0.0)	2 (100.0)	2 (100.0)	
Occasionally	3 (25.0)	9 (75.0)	12 (100.0)	
Don't use	296 (50.6)	289 (49.4)	585 (100.0)	
Marijuana				
Occasionally	4 (66.7)	2 (33.3)	6 (100.0)	0.343*
Don't use	296 (49.8)	298 (50.2)	594 (100.0)	
Other hard drugs				
During the weekends	1 (100.0)	0 (0.0)	1 (100.0)	0.389
Daily	1 (100.0)	0 (0.0)	1 (100.0)	
Occasionally	1 (100.0)	0 (0.0)	1 (100.0)	
Don't use	297 (49.7)	300 (50.3)	597 (100.0)	

Pearson's Chi-Square invalid as more than 20% of the cells had expected counts < 5

*Fisher's Exact Test

^f Pearson's chi-square test was invalid as more than 20% of the cells had expected counts < 5

^g Fisher's exact test

Table 4.21**Number of sexual partners in the last six months by cigarettes, alcohol, marijuana and other hard drugs use of learners**

Substance	No. of sexual partners in the last 6 months		Total <i>n</i> (%)	<i>p</i> -value
	1 <i>n</i> (%)	>1 <i>n</i> (%)		
Cigarettes				
During week & weekends	0 (0.0)	1 (100.0)	1 (100.0)	0.133*
Daily	0 (0.0)	2 (100.0)	2 (100.0)	
Don't use	48 (58.5)	34 (41.5)	82 (100.0)	
Alcohol				
Daily	0 (0.0)	2 (100.0)	2 (100.0)	0.156*
Occasionally	0 (0.0)	10 (100.0)	10 (100.0)	
Don't use	23 (22.8)	78 (77.2)	101 (100.0)	
Marijuana				
Occasionally	0 (0.0)	2 (100.0)	2 (100.0)	0.187
Don't use	23 (20.7)	88 (79.3)	111 (100.0)	
Other hard drugs				
During week & weekends	0 (0.0)	1 (100.0)	1 (100.0)	0.435
Don't use	23 (20.5)	89 (79.5)	112 (100.0)	

* Pearson's chi square test was invalid since more than 20% of cells have expected counts <5

Table 4.22**Condom use at last sexual activity by cigarettes, alcohol, marijuana and other hard drugs use of learners**

Substance	Condom use at last sexual activity		Total <i>n</i> (%)	<i>p</i> -value
	Yes	No		
	<i>n</i> (%)	<i>n</i> (%)		
Cigarettes				
During week & weekends	0 (0.0)	1 (100.0)	1 (100.0)	0.655*
Daily	0 (0.0)	2 (100.0)	2 (100.0)	
Occasionally	0 (0.0)	3 (100.0)	3 (100.0)	
Don't use	23 (21.5)	84 (78.5)	107 (100.0)	
Alcohol				
Daily	0 (0.0)	2 (100.0)	2 (100.0)	0.180*
Occasionally	4 (80.0)	1 (20.0)	5 (100.0)	
Don't use	44 (56.5)	34 (43.6)	78 (100.0)	
Marijuana				
Occasionally	0 (0.0)	2 (100.0)	2 (100.0)	1.000
Don't use	48 (57.8)	37 (42.2)	83 (100.0)	
Other hard drugs				
During week & weekends	0 (0.0)	1 (100.0)	1 (100.0)	1.000
Don't use	48 (57.1)	36 (42.9)	84 (100.0)	

* Pearson's chi square test is invalid since more than 20% of cells have expected counts <5

4.4.6 Sexual experience/abstinence among learners

Bivariate analysis (Table 4.7) showed significant associations between sexual experience/abstinence and intellectual impairment ($\chi^2(1) = 9.60; p = 0.002$); the age group of 15-19 ($\chi^2(1) = 18.96; p < 0.001$); and having a boy/girlfriend ($\chi^2(1) = 138.75; p < 0.001$). After

controlling for confounders in the logistic regression analysis, predictors of sexual experience/abstinence were having a boy/girlfriend, being intellectually impaired, being female, schools being located in less urban areas, and being in the age group of 15-19 (Table 4.24). Intellectual impairment was significantly associated with being sexually experienced ($p < 0.001$), indicating that the ML were significantly more likely to abstain from sex than IIL (see Table 4.24). The null hypothesis was therefore rejected. The associations between gender and sexual experience and school location and sexual experience, which were not evident in the bivariate analysis, only became apparent after controlling for confounders in the multivariate analysis (Table 4.23).

There were no significant differences between sexual experience and religious beliefs; languages spoken at home; living arrangements; HIV transmission knowledge and risk perception scores; use of cigarettes, marijuana and other hard drugs (Table 4.23).

Table 4.23**Bivariate analysis of sexual experience of learners**

Variable	Sexual experience		Total <i>n</i> (%)	<i>p</i> -value (<i>t</i> -test)
	No <i>n</i> (%)	Yes <i>n</i> (%)		
Group of learners				
Intellectually impaired	221 (73.7)	79 (26.3)	300 (100.0)	
Mainstream learners	252 (84.0)	48 (16.0)	300 (100.0)	0.002
Sex				
Female	215 (77.6)	62 (22.4)	277 (100.0)	
Male	258 (79.9)	65 (20.1)	323 (100.0)	0.500
Age group				
12-14	152 (90.5)	16 (9.5)	168 (100.0)	
15-19	321 (74.3)	111 (25.7)	432 (100.0)	<0.001
Have a boy/girlfriend				
No	383 (91.8)	34 (8.2)	417 (100.0)	
Yes	90 (49.2)	93 (50.8)	183 (100.0)	<0.001
School location				
Urban	322 (79.9)	81 (20.1)	403 (100.0)	
Less urban	151 (76.6)	46 (23.4)	197 (100.0)	0.360
Religion				
Christian	253 (77.4)	74 (22.6)	327 (100.0)	
Islam	218 (80.4)	53 (19.6)	271 (100.0)	
Other	2 (100.0)	0 (0.0)	2 (100.0)	0.502
Language				
English	56 (83.6)	11 (16.4)	67 (100.0)	
Ibo	14 (70.0)	6 (30.0)	20 (100.0)	
Yoruba	398 (78.7)	108 (21.3)	506 (100.0)	
Other	5 (71.4)	2 (28.6)	7 (100.0)	0.556
Living arrangement				
Mother & father	263 (81.4)	60 (18.6)	323 (100.0)	
One parent	68 (74.7)	23 (25.3)	91 (100.0)	
Alternative arrangement	142 (76.3)	44 (23.7)	186 (100.0)	0.233
Smoker				
No	464 (79.3)	121 (20.7)	585 (100.0)	
Yes	9 (60.0)	6 (40.0)	15 (100.0)	0.102
Alcohol use				
Daily	1 (33.3)	2 (66.7)	3 (100.0)	
Occasionally	19 (61.3)	12 (38.7)	31 (100.0)	
Don't use	453 (80.0)	113 (20.0)	566 (100.0)	0.007
Marijuana use				
Occasionally	4 (66.7)	2 (33.3)	6 (100.0)	
Don't use	469 (79.0)	125 (21.0)	594 (100.0)	0.612
Other hard drugs				
During the week & weekends	0 (0.0)	1 (100.0)	1 (100.0)	
Daily	1 (100.0)	0 (0.0)	1 (100.0)	
Occasionally	1 (100.0)	0 (0.0)	1 (100.0)	
Don't use	471 (78.9)	126 (21.1)	597 (100.0)	0.234
HIV knowledge score (%) ^a	62.37 (24.01)	58.97 (19.27)		0.141
HIV risk perception ^a	6.49 (1.90)	6.62 (2.16)		0.508

^a *n* (*SD*)

Table 4.24

Predictors of sexual experience from binary logistic regression models of having a boy/girlfriend, HIV knowledge scores, HIV risk perception scores, group, religion, school location, sex, age group, cigarette and alcohol use of learners

Variable	Model			
	β (SE)	OR	95% CI	p-value
Have a boy/girlfriend	2.94 (0.29)	18.98	10.84, 33.23	<0.001
Intellectually impaired	1.70 (0.30)	5.49	3.05, 9.88	<0.001
Female	0.65 (0.25)	1.92	1.17, 3.16	0.010
15-19 (yrs)	0.73 (0.33)	2.08	1.10, 3.93	0.025
School in less urban area	0.54 (0.27)	1.72	1.01, 2.92	0.044
Occasional alcohol use	-2.46 (1.64)	0.09	0.00, 2.12	0.133
Don't use alcohol	-2.92 (1.57)	0.05	0.00, 1.18	0.064

4.4.7 Relevance of the I-Change Model in predicting sexual abstinence

4.4.7.1 Relevance of the I-Change Model in predicting sexual abstinence among IIL

This study investigated which of the I-Change constructs – predisposing (demographic and socio-behavioural), awareness, motivational and intention factors – were significantly associated with sexual abstinence among IIL (Table 4.26). The measurement scales showed moderate to good internal consistency as presented in Table 4.25.

Predisposing factors

Gender: Female IIL were significantly less likely than males to be sexually abstinent ($p = 0.004$).

Socio-behavioural: Intellectually impaired learners who reported having boy/girlfriends were significantly less likely to be sexually abstinent than those who indicated not having

boy/girlfriends ($p < 0.001$). The confidence interval (CI) was very wide (but far away from 0), probably due to the small sample size as a result of analysing a sub-sample.

Physical environment: Learners with intellectual disability attending schools located in urban areas were significantly more likely to practise sexual abstinence than their peers in schools in less urban areas ($p = 0.021$).

Awareness factors

Non-severity of HIV: Sexually abstinent IIL were significantly more likely than sexually experienced ones to have reported HIV infection as a non-issue in their communities ($p = 0.038$).

Knowing one's HIV status: Being sexually abstinent was significantly associated with not having had a previous HIV test among the IIL ($p = 0.011$).

Outcome expectations: Outcome expectations of the practise of sexual abstinence, though practically significant, was not statistically significant in predicting the behaviour ($p = 0.100$). However, the trend suggested a tendency to be sexually abstinent as outcome expectations increased as shown in Table 4.10.

Motivational factors

Attitudes: Learners with intellectual impairment were significantly more likely to be sexually abstinent if they expressed positive attitudes towards sexual abstinence ($p = 0.025$).

Social influence: Similarly, they significantly tended towards being sexually abstinent when there was good support for their sexual abstinence from significant others ($p < 0.001$).

Self-efficacy: In addition, self-efficacy to practise sexual abstinence was significantly associated with sexual abstinence ($p = 0.004$).

Informational factors

Learners who did not report using radio as a source of HIV/AIDS information were more likely to be sexually abstinent, but this relationship was not statistically significant ($p = 0.090$) as shown in Table 4.26.

Intention

Learners with high intention to abstain from sex were significantly more likely to be sexually abstinent than those with low intention ($p = 0.005$).

Table 4.25

Questionnaire scale reliabilities (Cronbach's alpha), means, standard deviations, and number of items for IIL

Scale	No. of items	<i>M</i>	<i>SD</i>	α
HIV risk perception	3	6.03	2.07	0.70
Attitude	4	8.67	2.41	0.66
Outcome expectation	5	5.85	2.42	0.69
Social influences	6	15.26	3.16	0.82
Self-efficacy	3	6.66	2.06	0.68
Intention	2	2.55	1.60	0.92

Table 4.26

Predictors of sexual abstinence among IIL from logistic regression models of factors of socio-behaviour, awareness, information, motivation, and intention

Variable	Model			
	β (SE)	OR	CI	p-value
Have no boy/girlfriend	6.81 (1.13)	904.23	98.73, 8282.17	<0.001
Male	2.09 (0.72)	8.10	1.97, 33.33	0.004
Attitude	0.31 (0.14)	1.36	1.04, 1.79	0.025
Outcome expectation	0.20 (0.12)	1.22	0.96, 1.55	0.100
Social influences	0.46 (0.13)	1.58	1.24, 2.02	<0.001
Self-efficacy	0.53 (0.18)	1.69	1.18, 2.42	0.004
Intention	0.59 (0.21)	1.81	1.20, 2.75	0.005
Radio not source of HIV info.	1.17 (0.69)	3.24	0.83, 12.56	0.090
No HIV test	0.96 (0.67)	2.62	0.71, 9.71	0.149
Previous HIV test	-3.82 (1.50)	0.02	0.00, 0.42	0.011
Non-severity of HIV	2.12 (1.02)	8.31	1.12, 61.67	0.038
Unsure of HIV severity	0.02 (0.75)	1.02	0.24, 4.38	0.983
School located in urban area	2.18 (0.94)	8.82	1.39, 56.16	0.021
Not knowing someone with HIV	1.32 (0.74)	3.73	0.88, 15.80	0.074

4.4.7.2 Relevance of the I-Change Model in predicting sexual abstinence among ML

The measurement scales showed moderate to good internal consistency (Table 4.27). predisposing, awareness, motivational, informational factors and intention constructs of I-Change model predicted sexual abstinence among ML.

Predisposing factors

Have no boy/girlfriend: Sexually abstinent mainstream learners were, significantly, six times less likely to have had boy/girlfriends ($p < 0.001$) than those that were sexually experienced (Table 4.28).

Occasional use of alcohol: Sexually abstinent ML were significantly more likely to report occasional use of alcohol than sexually experienced ML ($p = 0.030$).

Non-use of alcohol: ML who reportedly practised sexual abstinence were more likely to be non-users of alcohol than sexually experienced ones. Although non-use of alcohol practically predicted sexual abstinence in this finding, the effect was not statistically significant ($p = 0.061$).

Awareness factor

Not knowing someone with HIV: ML who reported sexual abstinence were more likely to not know someone living with HIV. The effect was, however, not statistically significant ($p = 0.081$).

Informational factors

Church/mosque not source of HIV information: ML who reported sexual abstinence were also significantly almost six times less likely to have depended on churches/mosques for HIV information ($p = 0.004$).

Books as source of HIV information: Sexually abstinent ML were significantly more likely to have relied on books as a source of HIV information than sexually experienced ML ($p = 0.043$).

Teachers as source of HIV information: In addition, sexually abstinent ML were more likely to have reported teachers as source of HIV information than sexually experienced ML. However, this was not statistically significant ($p = 0.094$).

Newspapers as source of HIV information: Sexually abstinent ML were also more likely than the sexually experienced ML to have reported newspaper as source of HIV information, although the effect was not statistically significant ($p = 0.069$).

Motivational factor

Self-efficacy: There was also a significant association between sexual abstinence and self-efficacy ($p < 0.001$)

Intention

Sexually abstinent ML were more likely to report high intention ($p < 0.001$) to practise sexual abstinence than sexually experienced ML.

Although the trend was towards being sexually abstinent when alcohol was not used, there was no significant association between sexual abstinence and the non-use of alcohol (see Table 4.28).

Table 4.27

Questionnaire scale reliabilities (Cronbach's alpha), means, standard deviations, and number of items for ML

Scale	No. of items	<i>M</i>	<i>SD</i>	α
HIV risk perception	3	7.01	1.71	0.62
Attitude	4	11.13	1.67	0.69
Outcome expectation	5	14.67	1.06	0.73
Social influences	6	16.56	1.79	0.68
Self-efficacy	3	8.08	1.63	0.79
Intention	2	5.42	1.19	0.88

Table 4.28**Predictors of sexual abstinence among ML from logistic regression models of socio-behavioural and motivational influences on sexual abstinence**

Variable	Model			
	β (SE)	OR	95% CI	p-value
Have no boy/girlfriend	1.80 (0.44)	6.04	2.55, 14.30	<0.001
Alcohol (don't use)	2.66 (1.41)	14.22	0.89, 227.32	0.061
Alcohol (occasionally)	3.76 (1.74)	43.12	1.44, 1295.62	0.030
Self-efficacy	0.38 (0.11)	1.47	1.18, 1.82	<0.001
Intention	0.61 (0.15)	1.83	1.36, 2.47	<0.001
Church/mosque not source of HIV info.	1.74 (0.60)	5.67	1.76, 18.24	0.004
Newspapers as source of HIV info.	0.92 (0.51)	2.52	0.93, 6.81	0.069
Books as source of HIV info.	1.31 (0.65)	3.72	1.04, 13.3	0.043
Teachers as source of HIV info.	0.83 (0.49)	2.29	0.87, 6.02	0.094
Not knowing someone with HIV	0.83 (0.48)	2.30	0.90, 5.84	0.081

4.5 Results using qualitative methods

All of the interview and discussion scripts were reduced to the following five superordinate themes:

1. Vulnerability to HIV infection
2. Sexual behaviours
3. Access to HIV/AIDS education
4. Barriers to HIV testing and treatment
5. Making HIV/AIDS education accessible to learners

Note: The names given to participants quoted in this text are not their real names.

4.5.1 Vulnerability to HIV infection

4.5.1.1 *All human beings are vulnerable*

Spontaneous responses regarding vulnerability of PWD generally to HIV infection emanated from five teachers of IIL. Three of them were of the opinion that all human beings are equally vulnerable to HIV infection, whether they have disability or not, including their learners:

*They are not excluded because they are human beings; no matter how their condition is. Whatever happens to anybody without handicapping condition can happen to them.
(Enitan, female teacher of IIL)*

Whereas, the other two (both from less urban areas) believed that IIL are not vulnerable to HIV infection:

Because they are not in position to. I don't think so. I am not sure of them. Although they may, but. I don't think so because of their condition of living. They can hardly, unless they inherit it, i mean the blood from their family. But facially looking at them I don't think so.(Kate, female teacher of IIL)

They are not prone to HIV because it is rampant among non-disabled (female teacher of IIL)

No teacher of ML raised such vulnerability issues among young persons.

Though all human beings are susceptible or vulnerable to HIV infection, one-third of IIL teachers in each case judged PWD to be at greater risk of HIV infection than non-disabled persons due to disability-related factors and lack of HIV education.

Ha, you know the blind anybody can overpower them. Even, if they want to defend themselves, when they can't run to escape from those people, what will happen? (female teacher of IIL)

I support that they are at greater risk. If they do not educate them on sex and they are not informed about HIV, they will not know whether it is good to do this or not. It is when they are instructed about HIV that they will know what is good and the problem HIV might cause to their lives (Sisi, female teacher of IIL)

In addition, PWID are believed to be at greater risk of HIV infection than other PWD by over 60.0% of IIL teachers. The reasons attributed to this include low cognitive ability, lack of HIV education, sexual abuse and parental neglect:

Because anybody that comes to them, they will obey. They can't think. They don't have choice. But that of deaf and blind, they can reason, it's only that they don't see physically. Even if they can say no to people and there is nothing such people can do (female teacher of IIL)

On the other hand, about 30.0% of IIL teachers thought that their lack of commitment to specific partners as adolescents made them tend to have multiple sexual partners, which further put them at greater risk of HIV infection than adults. Other reasons for greater risk of HIV infection among ML than adults mentioned by their teachers include inadequate HIV education and peer pressure:

They don't have specific husbands, and due to boy/girlfriend relationships, they don't have specific boyfriends. They may have three or four and by that they will not know who and who that have contracted the disease. (Yemi, female teacher of ML)

4.5.1.2 Sexual beings

Learners in all the FGDs also confirmed that their peers are sexually active. Moreover, eight (four IIL and four ML) of the participants of in-depth interviews reported previous sexual experience. Three of the four sexually experienced IIL were females while two female ML also reported being sexually experienced. Teachers (66.0% of IIL and 42.0% of ML) also acknowledged the sexuality of their learners:

Many boys and girls of our age are having sex either with our peers or with adults. And they do it for different reasons (FGD 1, female ML)

Because people think that their vagina; nothing is wrong with their vagina. It is only their brain and it is only their intelligence quotient that is low. (Kate, female teacher of IIL)

You see, many of them who are that age, adolescents, they are sexually active (Yeye, female teacher of ML)

However, one-quarter of the interviewed teachers of IIL labelled sexual expressions of IIL as being inappropriate, excessive and abnormal. Such view was not expressed about ML by any of their teachers.

Sex itself doesn't have any meaning to them. It is like food. They love sex; those children with intellectual disability. They love sex. I don't even know what to use to describe the love they have for it. They do it anywhere; they are not ashamed. It's nothing to them. It has no meaning to them. As we are in this classroom, if they see that we are not looking at them, they will spread themselves on the ground and start doing it. (Kemi, female teacher of IIL)

Half of the sexual encounters reported by female IIL during in-depth interviews were with siblings and were either exploitative or forced. Such was not reported by any ML. Also, 75.0% and 25.0% of sexual encounters reported by ML and IIL respectively happened in stable relationships.

4.5.1.3 Lack of HIV/AIDS education

Low knowledge of HIV/AIDS was demonstrated by all learners, but worse for IIL. Almost all (12 IIL and 10 ML) the learners interviewed expressed their lack of adequate knowledge of HIV/AIDS and the desire to know more about it. The difference between HIV and AIDS was difficult for many learners to figure out. Only three learners (both ML) were able to distinguish between HIV and AIDS during in-depth interviews. Similarly, in each of the FGDs there were participants who could not distinguish between HIV and AIDS. Sexual intercourse and sharing of sharp objects were the most known route of HIV transmission among in-depth interview participants, including IIL. Apart from sharing of toilet and utensils mentioned by 3 learners (2 IIL and 1 ML), other wrong routes of HIV transmission mentioned by learners include smoking (1ML), supernatural power (1 female ML) and from animals (1 male IIL). The trend was similar in FGDs, where sexual intercourse was the most commonly mentioned route of transmission and with participants mentioning sharing of utensils as a way of contracting HIV. Weight loss was the most frequently mentioned symptom of AIDS by learners (1 IIL and 5 ML) during in-depth interviews. Five (2 ML and 3 IIL) in-depth interview participants could not mention at least one correct symptom of AIDS. In all FGDs, a few participants mentioned wrong symptoms of AIDS.

I want to know more. There are things that I don't understand well (IdI 1, male ML)

I don't know that HIV & AIDS are different (male ML, IdI participant)

They are the same thing (male IIL, IdI participant)

HIV can kill so many people, and AIDS can kill so many people also (male ML, FGD participant)

The main sources of HIV/AIDS information reported by learners during in-depth interviews were radio (6 IIL and 8 ML) and television (6 IIL and 7 ML). Other sources mentioned by six learners for each category were friends, parents and teachers. While equal number of IIL and ML mentioned friends and parents as their sources of HIV/AIDS information, only one IIL said teachers gave him HIV/AIDS information.

Almost all IIL teachers believed that learners with intellectual impairment were seldom aware of HIV/AIDS. The belief held by IIL's teachers, namely that HIV/AIDS information was too complex for IIL to understand due to the nature of their disability, and teachers' lack of skills to handle such were barriers to the provision of HIV/AIDS prevention education to this category of learners:

Are they aware of that? They are not aware. How much more of giving them orientation? They cannot adhere to it. Even when you give them sex education, only the parents will continue to guide these pupils. Because they have been with the problem and the problem is already permanent, so it cannot be changed. (Shosa, male teacher of IIL)

Even when HIV/AIDS education was being provided to learners with disability, those with intellectual impairment were being denied such opportunities because teachers lacked the skills to pass on the same information in an accessible format, making them more vulnerable to HIV infection than other PWD:

But we have been introducing HIV/AIDS to the deaf, and the blind can hear what is going on in the society. They know that if you do this thing without using condom you can get HIV. The deaf also have been shown different pictures. But the MR (mentally retarded) cannot interpret the pictures to know what is going on in their community. (Enitan, female teacher of IIL)

Almost half (5 out of 12) of ML teachers thought that for HIV information to be effective for the ML, the media as a source of HIV information should be complemented by individualised education. Parents who were in a position to provide such individualised education were not doing so because their cultural beliefs inhibited them from talking to their children about sex:

Because of their age and exposure; they are not well exposed. Nobody comes to talk about HIV/AIDS to them one-on-one except when they hear on the news media. Hardly will their parents talk about it at times. Around this area, they believe it is a taboo when a mother is talking about sex and all sorts. (Pius, male teacher of ML)

4.5.1.4 Sexual abuse and exploitation

According to 9 (75.0%) of IIL teachers, their learners were exposed to HIV infection because they were perceived as easy targets due to sub-average cognitive ability to refuse advances or the strength to avoid sexual exploitation and abuse by men who took advantage of them. In contrast, sexual abuse was not a big problem among ML as only 2 teachers of ML reported cases of sexual abuse among their learners.

Two female IIL in-depth interview participants also reported history of sexual abuse and exploitation. No ML reported being sexually abused.

He said he will break my leg if I shout for help. So he had sex with me by force and I couldn't tell anybody. I am afraid of him (IdI 4, female IIL)

What of those wicked people that are ready to bastardise them any day? They are ready to reap what they did not work for, and just use them. Not minding whether the man is having STIs or not. The man will not even care. What he wants is to satisfy his urge. And so there is an intellectually disabled person available, and he doesn't have money for the 'hawkers'. So the availability of that person is a settled thing for him. He will just command her; force her. If he wants to be gentle for another time's sake, without problem, he will just pet her. I will give you sweet. He knows she likes sweet; he knows her weakness. He asks her to sleep on the floor or wherever, and immediately the girl does, he satisfies himself. And he will give her sweet or just say come back I will give you in the evening, when he wants to have the evening one. So, definitely those ones with intellectual disability are terribly in danger of HIV. (Kemi, female teacher of IIL)

4.5.1.5 Disability-related stigmatisation

Not only were the learners with intellectual disability stigmatised, people that were close to them, whether parents, teachers etc., were also stigmatised, as reported by one-third of the IIL teachers.

Having children with disability was perceived by the society as a shameful thing, hence such children were supposed to be hidden from other people:

When pregnant women will sing in the hospital, they will say “ki Oluwa ma fun won ni omo agbepamo t’alejo ba nbo” (may the Lord never give them a child that they will have to hide from visitors). That is the language. They lock them up in a room. (Kemi, female teacher of IIL)

Some education supervisors (even males) refused to serve in special schools due to the belief that it is dangerous for people of reproductive age to have too much contact with PWD because they could give birth to children with disabilities, as demonstrated by:

Even some supervisors rejected to be posted here. They will say “ha, iyawo mi nbimo lowo o, e ma ko ba mi” (ha, my wife is still having children, don’t endanger my life). (Enitan, female teacher of IIL)

Teachers also experienced being labelled as disabled by their colleagues from regular schools just because they taught children with disability:

Even some people thought that all teachers in this school are handicapped. If we go for meetings with other teachers they will be wondering, so beautiful people like you are still in that school. (Enitan, female teacher of IIL)

Parents often did not want others to know that they had such children so as to avoid being scorned and, wherever possible, would try to avoid being seen with their children with intellectual disability:

As wealthy as you are in this family, so you have a handicapped child? They just send them out! They just come and dump them here in school. (Enitan, female teacher of IIL)

4.5.1.6 Neglect

In a bid to avoid stigmatisation, parents neglected their children with intellectual disability. When there were limited resources available to a family, the family member with disability suffered more deprivation and poverty, which heralded a greater risk of HIV exposure:

But most of the parents are not interested. Most of the children are living with their grandparents. Like the case of the girl I just mentioned, the mother is above 50 years. After the death of the father, the mother is having a workload of the so-called “normal” ones that she neglected this one. So she rarely takes care of her, but she is taking care of the other ones. (Kemi, female teacher of IIL)

Furthermore, stigmatisation caused institutional neglect, as reflected in the experiences shared by one of IIL teachers. Authorities considered provision of any resources to PWD as a matter of charity rather than being rights orientated:

At a time in the Ministry, our employers said “kilode? E ma ni walara jare. Awon omo ti won gbadun gan an awon teachers won o ni wa lara to bayi.”(What is the matter? Don’t trouble us please. Even the teachers of healthy children are not making life unbearable for us this much). And these people are being deprived of various rights. So if you ask for any HIV information about handicapped; less privileged. Forget about that. (Enitan, female teacher of IIL)

4.5.1.7 Low HIV risk perception

Eleven (91.6%) of IIL teachers related that learners with intellectual impairment were potentially at greater risk of HIV infection than other PWD due to their having little or no HIV risk perception as a result of their cognition-related disability:

They can't think wisely like that. The MR, their thought can't reach that. They don't even know they can get HIV. Those that can think like that are the blind, the physically challenged because they can reason. (Baba, male teacher of IIL)

On the other hand, almost all ML teachers expected mainstream learners to be aware of their risk of HIV. According to the teachers ML HIV risk perception was low because they did not see HIV as a priority. Some of them were even in denial, and perceived HIV information as a way of discouraging their sexual activity:

I think with the enlightenment they should know. But I don't think they feel it's important to them. They don't bother about it. They don't even want to know whether there is HIV/AIDS anywhere. They believe.....some of them still believe it is not true. Some of them still believe it is a way of debarring them from enjoying their lives. (Yeye, female teacher of ML)

Some female mainstream learners in three FGDs also shared the same view about their peers' belief that HIV/AIDS was not real. They saw it as a way of preventing them from having sex:

Some people call HIV/AIDS "American Invented means of Depriving people of Sex". So they think that AIDS is just to deprive them of sex. Some think that AIDS is not even real. (FGD 1, female ML)

It was also difficult to convince them of the existence of HIV/AIDS because most of the learners (IIL and ML), including the teachers, had never seen somebody they knew living with HIV. This was expressed by (5 ML teachers and 7 IIL teachers). The same reflection was shared during FGDs and in-depth interviews. Intellectually impaired persons with HIV were not anticipated:

Young people do not fear HIV as such because they have never seen HIV-positive person who is their relative or neighbour which can create fear in their mind. (FGD 1, female ML)

To me in this part of the world one cannot be precise because the only thing we know about HIV/AIDS is what we are hearing on mass media. Actually, I am not saying that young people are not contracting it, but we have not heard that so and so persons are dying of HIV/AIDS. (Wole, male teacher of ML)

I have never heard of HIV in persons with intellectual disability. It is only those that are able-bodied that I have heard because the way that the able-bodied are performing you won't see MR and other disabled performing like that. (Baba, male teacher of IIL)

Some young people believed that they were too young to contract HIV, although they acknowledged that it could be real:

I know she can't have it because she is still young. (IdI 2, male ML)

4.5.1.8 Poverty

Half of ML teachers were of the opinion that poverty was a major contributing factor to young people's sexual risk-taking, which in turn further exposed them to HIV infection:

They are prone to it in our area because of their socioeconomic background. This poverty is sending them on an errand. They hawk around for their parents, so they have high tendency. They are at risk of HIV infection. (Pius, male teacher of ML)

Learners with intellectual disability were not left out of this. Parental neglect and stigmatisation were cited by 7 (58.3%) of IIL teachers as the main reasons why these learners were subjected to poverty more than other members of their families, and hence why they had a greater risk of HIV infection:

Maybe at home that girl has been neglected. They just drive her out of the house to come and warm the bench in school so that before she comes back home they would have rested. Just give her N10. Is N10 sufficient for the girl? And one of her peers wants to give her N50 or N100, she will just agree. (Enitan, female teacher of IIL)

4.5.2 Sexual behaviours

4.5.2.1 Reasons for having sex

Participants' accounts of reasons for learners' sexual activities varied and included the following:

Natural sexual urge and attraction: Sexuality was deemed natural and to cut across all human segments regardless of whether a person had disability or not. This was the position of six teachers (2 of ML and 4 of IIL teachers):

Sex is a natural phenomenon with the so-called normal and handicapped people. It is a natural phenomenon that just happens. (Kemi, female teacher of IIL)

It's the urge; it's just that they can't control it. (Kemi, female teacher of IIL)

The two teachers of ML also felt that it could be triggered by physical attraction to the opposite sex. The beauty of young non-disabled people blooms at around the age of puberty and this makes them very noticeable to the opposite sex. Nothing like this was reported about IIL:

Adolescence is a period whereby so many opposite sex notice the beauty. At that stage it is like a flower. You know a beautiful flower attracts insects, and the beauty at that tender age attracts so many of them. And when this opposite sex approaches them, they believe that I am so popular. (Kehinde, female teacher of ML)

Pleasure: During in-depth interview sessions, both groups of learners (2 IIL and 4 ML) reported deriving pleasure from having sex and two ML teachers also suspected that pleasure was a significant reason for adolescents continuing with sexual activities once any sexual behaviour had been initiated. This was reported during all FGD sessions as well:

Sex is very pleasurable to those who have tasted it (FGD 2, male ML)

Some are using it for pleasure. You know once they tasted it they will not stop. They will continue, maybe due to the enjoyment. (Yemi, female teacher of ML)

It made me feel good that day (smiles). (IdI 1, male ML)

I enjoyed it so much. (IdI 3, female IIL)

“*Sex enhances beauty*” – a misconception: However, non-disabled young people in less urban settings lacked adequate knowledge about puberty and held the misconception that having sexual intercourse made them look more attractive, as expressed in two FGDs (1 male and 1 female groups in different less urban areas):

Some girls believe that sex will make them big and their buttocks will shoot out. (FGD 2, female ML in a less urban area)

To seal their love: There was a perception by girls in two female FGD groups that boys used sex to keep girls in a relationship even when they were maltreating them, whereas girls thought sex was a sign of commitment and love.

People think that having sex will seal their love. They believe that once they have sex it will be difficult for the girl to leave even if the boy is not treating her well, she will endure it so that the boy does not laugh at her that she is a useless girl. (FGD 1, female ML)

Parental and societal influence: A negative attitude prevails regarding marrying PWD. At the same time, the Nigerian and/or African society expects that everybody should have children. Thus, one-quarter of teachers of IIL in this study related that parents were desperate to find sexual partners for their children. In addition, teachers reported that parents perceived grandchildren from children with intellectual disability as compensation for the ‘loss’ suffered by having children with intellectual disability:

You know these children are also found within the so-called rich people. They are the ones that introduce sex to them. They want their boy to have a baby; they will now bring a female for him. So that is how boys start. But anytime they introduce sex to them, they start demanding it. (Sisi, female teacher of IIL)

Even some of them that are reproducing now, their parents see it as a blessing that they have now gotten a normal child instead of the intellectually disabled one. (Mopelola, female teacher of IIL)

Teachers also shared the same view and often encouraged parents to arrange sexual partners for their children with intellectual disability so that their offspring could take care of them when the parents died, as revealed by one teacher of IIL:

Many times we have counselled the parents that they should look for somebody who can impregnate her. If she is having a child of her own, even if heaven falls and the siblings don't like her, her child knowing that this is my mother, and normal child, will help and take care of her even when the parents have gone. The same thing we tell the other parents too. (Kemi, female teacher of IIL)

Non-disabled young persons could also be influenced by promiscuous parents to start sexual activities or did so as a result of broken homes. This emanated from 2 FGD among female ML:

And some maybe they are from broken homes and maybe they don't have anybody to look after them. As in some people do say "owu ti iya ba gbon ni omo a ran" (children follows their parents footpaths), so at times children do follow after what their parents are doing. Some parents are involved in it, so the children will think since their parents are doing it that maybe it's a pleasure and they too decide to join. (FGD 1, female ML)

Peer pressure: The desire to be accepted and respected as mature persons by their peers forced many young people into having sex as reported during 4 FGDs and interviews with 5 ML teachers:

You know they believe that if they are not practising it they are not exposed. You are too local. You are not exposed if you have not been practising sexual intercourse. That's what they say. (Jide, male teacher of ML)

It may happen as a result of bad company that youth are relating with and if s/he refuses to follow the gang and do accordingly they may be saying to them that they are still a child. They will look down on such a person and may not even want to relate with him/her again. (FGD 1, male ML)

Three girls and two boys with intellectual disability also reported experiencing pressure from their non-disabled peers to engage in activities that could result in sex:

She said my mummy is fond of locking me up not allowing me to go out; that I am just indoors watching TV instead of going out. She will say she is going out. And if she asks me to follow her to her boyfriend I always refuse. (IdI 1, female IIL)

Experimentation: On the other hand, some young boys had sex to experiment and/or test their fertility according to participants of 3 male FGDs (1 IIL and 2 ML). The same view was expressed by two non-disabled boys during in-depth interviews:

Some are doing it in order to know whether they can impregnate a girl or not. (FGD 2, male ML)

Because you want to know if you too can have a child (FGD 1, male IIL)

That day it was an opportunity for me to taste it. (IdI 1, male ML)

Exposure to media and pornographic materials: Teachers and learners believed that increased access to explicit sex through media and pornographic materials were also reasons that caused young people to have sex:

The availability of blue films in the market also motivates young people to engage in the act. After watching the films, his body will be moved and will want to practise what he has watched. (FGD 1, male ML)

Most of them, I do meet them on the internet. Instead of them browsing for something useful, you see them looking at these pornographic pictures and these funny films. I think that's one of the major things that expose them to that act. (Wole, male teacher of ML)

Financial/material gains and poverty: Girls engaged in sex as a means of survival, particularly in cases where parents were not able to provide for their needs, as revealed during three FGDs among female ML. Two teachers were of the same opinion:

Some parents cannot meet the needs of their daughters which lead them to join groups that will introduce them to big buys who can cater for their immediate needs. (FGD 4, female ML)

For some of them maybe it is because of the finances at home. They believe that this is my boyfriend that is financing me; he must have that. (Kike, female teacher of ML)

4.5.2.2 Age of sexual partners

Half of all teachers (5 IIL and 7 ML) believed that young people with and without intellectual impairment had sex with their peers more often than with adults. Non-disabled girls in 2 FGDs expressed similar belief:

Young persons have sex with their mates more than with adults. It is only few girls that have sugar daddies (FGD 2, female ML)

Also they report their mates; they don't find it shameful. They will report that one boy over there gave me something and we close the door..... That of their age mates is very rampant than older people. (Shosa, male teacher of IIL)

They have more with their peers. I have not really seen them having much engagement between the older and the younger. But with their mates, it's common. (Yeye, female teacher of ML)

Meanwhile, intellectually impaired female learners did experience sexual abuse and exploitation more with non-disabled adults, who found them easy prey and took advantage of them based on the accounts of five IIL teachers:

We had followed a learner to an herbalist's house; an elderly man having sex with her. (Shosa, male teacher of IIL)

They raped one girl here about two years ago outside the school. After school, the girl would go and meet her parents in their mechanic workshop. On her way, one man who had known her for so long invited her to an uncompleted building and raped her. The girl started crying after the rape. It was the cry that one night guard followed to that uncompleted building. And when they caught him, it ended there. (Kemi, female teacher of IIL)

However, the non-disabled girls often had sex willingly with older men for material gains as revealed in three female FGDs:

They have sex with working-class men like carpenters, drivers, mechanics, okada (commercial motorcycle) riders because these men make money on a daily basis unlike young boys. (FGD 2, female ML)

4.5.2.3 Limitations on sexuality

Learners with intellectual disability had limited opportunities to explore their sexuality due to:

Lack of sexuality education and knowledge: They were often denied education about sexuality due to the belief that their disability precluded them from acquiring knowledge through the conventional methods. This opinion was expressed by five of IIL teachers:

They don't know. For example, we have been teaching 1-5 since morning and they still don't know it. They can't reason by themselves. If you give them sexuality education, they can't understand it. (Ronke, female teacher of IIL)

Stigmatisation: according to three teachers of IIL, society also perceived PWID as being undesirable as dating partners or spouses, thereby limiting their chances of having stable sexual relationships:

At times the children marry old women because they know that nobody that is alright will marry them. (EniOlorun, female teacher of IIL)

Social exclusion: Parents of learners with intellectual impairment would not allow them to go out and socialise, either because they wanted to protect them from abuse or they did not want other people to know they had such children. As expressed by two IIL teachers, this lack of socialisation put them at a disadvantage in terms of acquiring the skills needed to establish and maintain intimate and sexual relationships:

All of them are sexually active except one girl. She could not have had sex because the parents are clergy and she is always under lock and key. They bring her to school in the morning and come for her in the afternoon. Immediately she gets home they lock her up. No social interaction. (Kemi, female teacher of IIL)

4.5.2.4 Ways of exploring sexuality

Young people explored their sexuality through:

Intimate relationships with the opposite sex: One-third of teachers of IIL attributed sex among learners as being caused by instinctual sex drive, believing that they did not have the capacity to develop emotional or intimate relationships with the opposite sex:

They just play with each other. For example, there is a girl here who got pregnant in primary 4. “Ikan naa to je dindinrin ladugbo won lo fun loyun” (she was impregnated by her peer with intellectual disability in her neighbourhood). She brings the child here on Fridays. The boy also finished from here. There is usually nothing concrete between them. They just have sex anyhow when they have the urge. (Ronke, female teacher of IIL)

However, evidence from the interviews suggested that IIL were actually capable of intimate relationships, especially with peers with intellectual impairment. The relationships were not exploitative but rather symbiotic. Below, Taye, a 17-year-old female with intellectual impairment, describes her relationship with her 18-year-old sexual partner, also with intellectual impairment, during a one-on-one in-depth interview with her:

I first met Feyi in school; we used to sit together.

I intend to marry Feyi.

Feyi is very beneficial to me.

I don't like my non-disabled adult sexual partners.

I like Feyi because if he sends me one child that I should buy him something, I do. And he also buys me things once in a while.

He doesn't come to this school again and lives very far from me but I do go to his house and I do tell my mother that Feyi is ill and I want to go and greet him.

Taye reported having three sexual partners, two of whom were non-disabled adults who used to give her money. Feyi was the only one that was her peer and also had intellectual disability.

A teacher recounted how one of his learners with intellectual impairment had established a relationship that resulted in pregnancy, despite the fact that the young persons with intellectual disability lived very far from each other and did not attend the same school:

One 16 years old girl from this class performed the act outside and she got pregnant. Later we were informed that the girl was pregnant and she gave birth to a child. The boy that impregnated her was a bit younger than her and also has intellectual disability. I was told that the boy lives at Gate and the girl lives at Iyana Church. I don't know how they came together. I don't know. Maybe they came here to perform one ceremony and that was when they met. I cannot really say. (Ola, male teacher of IIL)

Similarly, non-disabled learners became involved in intimate relationships with their peers but hid such from their teachers because they had the tendency to judge or condemn their behaviour, according to eight of their teachers:

They have but they will like to hide things like that from us teachers. They know if we know we will advise them not to practise such by now. We used to tell them that now they should face their studies; this is not the right time to have boy/girlfriends. What they need now is to face their studies. But we know that they have between themselves. Now, we have learnt that some of them even got pregnant during the last strike. (Jide, male teacher of ML)

There was evidence that education alone could not help these learners; rather, they should be armed with the necessary skills to handle their sexuality. Two ML teachers gave this account. A teacher expressed her frustration about this issue in this manner:

But you know some of them, for just a short period they will break and then re-engage. They are back into in; maybe because there is no follow-up. So I think they still need more intensive knowledge about it. They need intensive knowledge and they need care and a kind of follow-up even if there is anything at all. (Yeye, female school counsellor & teacher of ML)

Peeping at others and touching female bodies: Both groups of learners (boys) satisfied their curiosity about the opposite sex by peeping at them and touching private parts of bodies of the opposite sex. They also peeped at their parents having sexual intercourse:

There is one boy there who usually plays with the girl sitting beside him. I think that the boy is mature enough. I think nature can prevail. At times we see him playing with the girl's breasts. (Mama, female teacher of IIL)

They know that their parents are having something and some of them due to poverty; you will see a family of five living in a room. And the children will be looking at them like this when they are having fun. (Fatima, female teacher of ML)

Before now, this boy used to go to other people's houses and be peeping at women/girls bathing. (Kemi, female teacher of IIL)

Masturbation: Boys with intellectual disability masturbated in public to satisfy their sexual urges in the absence of a willing sexual partner, as reported by two teachers:

There was a case of a boy here who had the urge and when couldn't find anybody started having sex with the floor. (EniOlorun, female teacher of IIL)

Watching pornographic materials: Young people with and without disability reportedly watched pornographic materials. However, those with intellectual disability lacked direct access to such materials and were cheated by non-disabled peers who they depended on to supply pornographic materials:

The other boys in the community do show him empty pornographic movies packs and asked him to come and rent it. He will be asked to bring N50 or N100 and they will give him empty packs. He will just be looking at the pornographic pictures on the pack. (Kemi, female teacher of IIL)

There was a time I experienced something in this school. A boy brought a phone containing some pornographic pictures. He was showing his friends and they were looking at it and laughing. (FGD 1, female ML)

Sexual intercourse: Young people, regardless of disability, generally had sexual intercourse because they were curious or because other people were doing it:

So those of them that have high libido when they are just playing with opposite sex, they will feel somehow. And the boy now knows that they are feeling somehow, they will try to test them. (Fatima, female teacher of ML)

All of them are having sex. (Kemi, female teacher of IIL)

4.5.2.5 Low condom use

Young people seldom used condoms during sexual intercourse. Most (4, 66.7%) II boys reported that they had seen and knew where to obtain condoms, whereas most (4, 66.7%) of the girls with intellectual disability were neither aware of condoms nor knew where to obtain them:

I have never seen a condom before and nobody has ever used it with me. (IdI 3, female IIL)

I don't know where I can get condom to buy. (IdI 2, female IIL)

I have seen condom before. They use it so that one doesn't contract AIDS. (IdI 1, male IIL)

You can get condoms to buy in chemists. (FGD 1, male IIL)

However, boys with intellectual impairment had negative attitudes towards condom use, found them difficult to obtain due to disability-related stigmatisation and those that were sexually active lacked the skills to negotiate their use. This was documented in one FGD with male IIL and one in-depth interview with another II boy:

Is it a good boy that has condoms? (FGD 1, male IIL)

It is not easy to obtain. They will be making jest of you saying, you too are using condoms with your condition. (FGD 1, male IIL)

No (smiles)...I can't ask my girlfriend to let us use condom. (IdI 1, male IIL)

As expressed by two female ML during in-depth interviews, the fear of being labelled promiscuous by sexual partners was a barrier to negotiating condom use among sexually active non-disabled girls. They also indirectly perceived males as having the authority to make such decisions:

Ha, it is difficult to ask a man to use it. They would think this girl must be promiscuous. (IdI 1, female ML)

It is his responsibility to have condom. (IdI 1, female ML)

Two boys who initiated sex at younger ages reported no knowledge related to how to have safe sex. Boys also lacked the skills to negotiate condom use during subsequent sexual exposure, despite the fact that girls expected them to initiate and take responsibility for condom use. Because they perceived themselves as having authority in decisions regarding condom use, they did not feel they needed to discuss condom use with their partners and made decisions regarding their use in isolation:

I wasn't aware of condom the first time I had sex. (IdI 2, male ML)

It is male's responsibility to have condom. (IdI 2, male ML)

I can't tell her. I will use it. It is not compulsory to tell her. I will just use it and she must agree. (IdI 1, male ML)

She will definitely see it. She will see it when one wants to use it. I won't tell her. (IdI 2, male ML)

Because society does not accept the sexuality of young persons, non-disabled boys who were too timid to obtain condoms got them from friends while girls sent children to buy for them as revealed by five ML. During three FGDs (1 IIL and 2 ML), boys also reported they used brand names or adopted false names when purchasing them:

It is easy to obtain from ones friends. (IdI 2, male ML)

Some people send children. (IdI 2, female ML)

It is very easy to buy. I will just say I want to buy 'Gold Circle', 'umbrella', 'bulletproof', 'cd'. (FGD 4, male ML)

It is very easy to buy. After all, the seller wants to make sales. Just walk in; pick yours and pay for it. It is readily available in chemists. (FGD 4, male ML)

According to participants of three FGDs (1 female and 2 male groups) major barrier to condom use among young persons was the claim that it diminishes pleasure during sex:

Young people feel comfortable having sex 'flesh-to-flesh' because condom will reduce their enjoyment. (FGD 1, female ML)

4.5.2.6 Sexual expectations and dreams

During in-depth interview sessions, six (5 IIL and 1 ML) young persons did not express a preference regarding whether their first sexual intercourse will be premarital or not. Six others (3 IIL and 3 ML) specifically mentioned that it will be after marriage, while four others (all IIL) intended to have pre-marital sex. However, a boy with intellectual disability seemed to be aware of how society perceived persons with disability as marriage partners and desired to have non-discriminatory wife that would accept him despite his disability:

A good wife that does not say she doesn't want this kind of man or that this is not a good man is the one that can have children for me. (IdI 2, male IIL)

Six sexually abstinent learners (1 ML and 5 IIL) recognised the importance of finishing their education and being financially independent before having sexual commitments:

I will have sex for the first time when I am older and married. (IdI 4, male IIL)

I am not ready for sex because I don't have money yet. (IdI 5, male IIL)

I will do that when I finish my education. (IdI 3, female ML)

However, because they thought that they would only start having sex when the time was right, they were well prepared and in committed relationships, two (1 IIL and 1 ML) sexually abstinent young people did not see why they should use condoms:

If it is with my wife, I don't need to use it. (IdI 3, male IIL)

*I don't have such plan to use condom because she has become my wife.
(IdI 3, male ML)*

4.5.3 Barriers to HIV testing and treatment

Low awareness of testing centres: Most learners (6 IIL and 7 ML) were aware that hospitals served as HIV testing centres. In the opinion of a teacher, because hospitals were perceived to be for the sick, learners generally were not likely to seek HIV screening from hospitals. Awareness of alternate HIV testing centres was low. Girls (3) with intellectual impairment had little or no awareness of any HIV testing centres:

Hospitals; they only told us about hospitals. (IdI 1, male ML)

I don't know where to do HIV test. (IdI 4, female IIL)

Take HIV test to schools. It will not be in their hospitals because nobody will go there! It is only when they are sick and now begin to have signs and symptoms that are related to AIDS that they go to hospitals and are asked to take HIV test. (Fatima, female teacher of ML)

Negative attitudes of health workers: Five ML during in-depth interviews reported that young people hated going to the hospital for HIV-related services because health workers were judgemental adults:

I have heard of HIV test before but I don't think it is for people like me. If I get there now they will laugh at me. You know I am young. They will say at my age, I want to do HIV test. I am shy. I don't like going to hospitals. (IdI 2, male ML)

According to two IIL teachers, health workers also stigmatised PWD and PLWHA, and this presented a great obstacle to PWD getting tested for HIV:

HIV/AIDS clinics don't want to see them. They will say, you? You come for this test? Even the present problem you are having is enough for you. (Enitan, female teacher IIL)

Health workers don't think much about them; they just look at them as nobody. They don't recognise them, so they will not want to go. (Adeola, disabled female teacher of IIL)

Proximity of testing centres: Even when they were aware of hospitals where HIV tests could be taken, the non-availability of such testing within their immediate environments presented another obstacle to being tested as revealed by one ML and one teacher in less urban areas:

If the hospital is close to them for the sake of even having hospital, but hospitals are not close to the majority of them. (Yemi, female teacher of IIL)

The hospital where one can do HIV test is far. There is none in our town here. (Idi 3, male ML in a less urban area)

Stigmatisation: A teacher cited that the link between HIV infection and sexual intercourse, coupled with the fact that the infection is incurable, provides good grounds for stigmatising people with HIV. This associated stigmatisation discouraged young people from wanting to know their HIV status:

Because it has depicted the type of person somebody is. Now, if they said somebody is having AIDS even if you are not a flirt, they will see you to be one. Start to label you with many names, saying "asewo, ti ko ba n se asewo" (a promiscuous person, if s/he is not promiscuous) how will s/he be infected with HIV? That is the stigma that people always run away from; and that is why they cover themselves. (Shosa, male teacher of IIL)

In the opinion of another teacher, because disability is also associated with stigmatisation, for a PWD, being diagnosed with HIV means enduring double the stigmatisation, hence the reluctance of PWD to get screened for HIV:

First, he has a stigma of being a disabled person. For him to take himself to that level again he will say it is too much on him/her, and would prefer even to die than to add another stigma. (Yemi, female teacher of IIL)

Assumption of non-vulnerability to HIV infection: In the opinion of four participants (2 teachers and 2 ML), due to ignorance, young people and those with disability were assumed not vulnerable to HIV and had no need to go for an HIV test. Consequently, having a disability and being young made the idea of taking an HIV test virtually unheard of:

In this part of the world, we are like in a primitive environment where people don't value....not that they don't value but a father of young ones like these will not believe that their children could have something like that. (Wole, male teacher of ML in a less urban area)

They don't take them for HIV test because they don't believe that they can contract HIV. (Ronke, female teacher of IIL)

They would be thinking that can someone like them have contracted disease or what are they going there for? (IdI 5, female ML)

Operational barriers in service utilisation: Generally inefficient services in hospitals, in the form of unnecessary repeat visits and spending long hours waiting to be seen, were barriers to utilising hospital services, particularly in the less urban areas where hospitals were often far from the residents' homes. These were in the opinions of one male ML and one male ML teacher:

Some people think they may give them another appointment instead of attending to them on the same day they visit. (IdI 3, male ML)

For the younger ones, even mere going to the hospital they feel it's a mere waste of time because you go there to waste time. The thing you suppose to do around 30 minutes, you will be there spending hours. Why would you want to waste your time? (Ade, male teacher of ML)

Lack of good medical care: Generally, young people lacked good medical care, especially with HIV/AIDS-related services, but this was worse for PWD due to parental neglect, poverty, and a communication gap between PWID and health workers:

Some of them when they are sick and you ask them to go to the hospital they will say they don't have money to go. Even transport fare is difficult because they will have to go to Ogbomoso. So because of lack of funds majority of them are denied of good healthcare. (Jide, male teacher of ML)

When they go outside, health workers would not understand them. (Adeola, disabled female teacher of IIL)

The parents don't care about them to take them to hospitals. Some parents even want them to die so that the shame will be covered. (Shosa, male teacher of IIL)

Traditional beliefs: A parental belief about the sacredness of blood prevented some children from having their blood drawn by health workers and thus resulted in their not being able to have an HIV test. Similarly, some families would rather go to traditional healers for herbs to treat their ailments than go to the hospital. Such people got diagnosed with HIV when they were already ill or never were. This issue was raised by four teachers (1 IIL and 3 ML):

Blood is a special thing. You can be initiated or used for rituals. So parents would even tell their wards, anything that involves your blood let me know first before you do it. When you talk about blood you are not allowed to give it out for any reason. (Pius, male teacher of ML)

We have some of them who say they don't believe in medications. They prefer taking traditional whatsoever. (Kike, female teacher of ML)

Fear of death: A positive result caused fear of an untimely death and was one of the reasons that young persons did not go for an HIV test. This was raised by two ML who were participants of in-depth interviews and in all FGDs among ML and two FGDs among IIL:

If one is HIV positive it means he has received his death sentence. (FGD 1, male ML)

Fear of accidental infection by health workers: Participants of four FGDs among ML were also afraid of being accidentally infected by health workers during the test:

One can be infected through unsterilized instrument used for infected persons. (FGD 2, female ML)

Financial constraints: Young people erroneously believed that it was expensive to take an HIV test and receive treatment. This result was obtained from two in-depth interviews and two FGDs:

Financial constraints may prevent young people from going for HIV screening. (FGD 3, male ML)

Money can be a barrier. (IdI 3, male IIL)

4.5.4 Access to HIV/AIDS prevention education

Four learners who were in-depth interview participants reported that they get less information on HIV testing, prevention, treatment. According to the account of seven in-depth interview participants and 10 ML teachers, much of the HIV/AIDS information available to them focuses on HIV transmission and the fatal nature of the infection. However, in spite of the reported availability of information on HIV transmission, there is an indication that adequate understanding is lacking as expressed by five ML during in-depth interview sessions.

How people get it. I understand a bit, but not completely (IdI 1, male ML)

They do say that you can't eat with somebody that has it. So you can't share plates with them. I will like to know the truth (IdI 6, female ML in a less urban area)

The meaning of HIV, AIDS, how it spreads and does not spread; that there is no cure.

That is all we teach them (male teacher of ML)

Hesitation.....yes. We advise them to go for HIV test. But it's like as small as they are some of them are so scared to go for such. We refer them to some of these big hospitals (female teacher of ML)

In the case of IIL, many (7) did not even have an idea of what they will like to know more about HIV/AIDS, except that it kills. Four IIL teachers confirmed that they did not give HIV education to their learners because they could not understand the message:

I know that one can die if he has AIDS (FGD 1, male IIL)

There is a traditional healer that I know that heals HIV (IdI 1, male IIL)

Yes, we teach the deaf and the blind because they will write something down. We asked them questions. We excluded MR because their cognition is not at the same level with the others. And none of them had interest by then. We asked them to come they didn't join us. These MR you cannot force them. It's whatever they want to do according to their interest. You cannot force them (Yeni, female teacher of IIL)

Moreover, six learners desired to know more about the difference between HIV and AIDS, signs and symptoms of AIDS, disease progression, mother-to-child transmission and HIV prevention.

I want to know how we can observe the person that has HIV/AIDS (IdI 4, female ML)

When HIV is in a pregnant woman, I want to know how to prevent the child from having HIV (IdI 1, male ML)

Similar needs were expressed among participants of almost all the FGDs.

It is difficult and confusing to know how an unborn child can get HIV from the mother. I think people like us should be taught that (FGD 2, female ML)

Even nobody teaches us about where to get HIV test (FGD 3, male ML)

Never! They don't tell us about condoms. If you mention it, you are a bad person. Many of us have never seen one being unwrapped in real life (FGD 1, female ML)

Furthermore, most (9 out of 12) of the mainstream learners' teachers were not aware of sexuality and HIV/AIDS education comprising part of the school curriculum, except for the few who taught subjects in which the topic was included, for instance, in Basic Science:

It is not in the school curriculum. (Yemi, female teacher of ML)

The government has its own policy which even not the principal can uproot. They are just planning to introduce sex education into our curriculum. (Pius, male teacher of ML)

It is in the school curriculum. Now, for the JSS 1 last term there was something on AIDS and STIs under their Basic Science curriculum. (Fatima, female Basic Science teacher of ML)

In addition, because HIV/AIDS was not considered a priority and was most often viewed as a moral issue, 13 teachers of ML confirmed that it only featured once in a while in Literary and Debating Clubs, extracurricular activities and moral instruction:

Maybe I will try to use the extracurricular time to fix in a talk on HIV/AIDS and some other areas that need to beyou know on topical issues that are common now. (Yeye, female school counsellor & teacher of ML)

We teach them as part of their moral instruction in the morning assembly. (Yemi, female teacher of ML)

Half of the teachers of ML were not prepared to teach sexuality education based on moral and religious objections:

Some people are feeling how would they be teaching sex education in the class? But now that we have new teachers around, I will try it. I have not tried to psychoanalyse them and see whether they will be interested. I'm just talking on the views of the older teachers we had the other time. Many of them were feeling that they were Christians; they belong to this and that religion. (Yeye, female counsellor & teacher of ML)

On the other hand, six younger teachers felt more comfortable teaching about sexuality and HIV issues:

*It is easy, they will laugh and do all sorts as if we are playing....laughs.
(Bunmi, 33 year old female teacher of ML)*

Two teachers held the impression that it was not being effectively implemented because the government did not enforce it:

*It all depends on the government. If they tell them to do it they will succumb immediately.
They will probably train teachers to acquire more knowledge about it. (Pius, male
teacher of ML)*

On the other hand, as confirmed by 11 teachers of IIL, sexuality and HIV/AIDS education was not in the curriculum for learners with intellectual impairment at all, and was only taught haphazardly at teachers' discretion to mature (from age 18 and upwards) and/or sexually active learners.

*We have not been including sexuality education in our own curriculum with these special
children by now. We are not teaching them. (Ola, male teacher of IIL)*

*Starting from 18 years and above, if you see that this boy/girl is mature enough, we
always tell them don't do this; don't do that. (Mama, female teacher of IIL)*

*It is only when we notice that something is going wrong with them. Then, we ask the
females, did anybody touch your breast? That is when we teach them.
(Sisi, female teacher of IIL)*

According to the account of seven IIL teachers, the content of such education for IIL was restricted to warnings, wrong teachings and corporal punishment to scare them away from having sex:

*Then we make the boys know that you must have money in your pocket to feed your wife
and children before you can have sex. Because we make them believe that any sex is
pregnancy. Because if you don't let them believe that any sex is pregnancy it becomes a
free for all because they love it. And because sex has no meaning to them, we have to put
a fear in them. (Kemi, female teacher of IIL)*

At times, we discipline any offenders in front of others. And we let others know that what s/he did was not good and they should not emulate such behaviours. (Ronke, female teacher of IIL)

In the case of non-disabled adolescents, only abstinence was encouraged:

At times they will ask questions about how to go about it. But what we do tell them is that at their age total abstinence is the only thing that they need.... in fact, we will not even emphasise the issue of using condom at their age, no! But we just tell them, you keep away from opposite sex. (Kehinde, female teacher of ML)

Apart from school-based HIV/AIDS education, religious and non-governmental organisations (NGOs) reached out to learners. Their efforts were, however, concentrated more in the urban areas. Learners with intellectual disability were completely marginalised in such efforts because NGO programmes did not target them. Only on rare occasions had they provided teachers of learners with disability with HIV/AIDS education based on the assumption that they possessed the necessary skills to pass on the relevant information to their learners:

The ones that come don't talk about HIV/AIDS. They are helping to build our toilets and vocational centre. (Kemi, female teacher of IIL)

They don't come! Never! I have been here for the past 16 years. Just only ARFH organised seminar for us teachers to teach these pupils. (Enitan, female teacher of IIL in an urban area)

None has ever come here. (Kike, female teacher of ML in a less urban area)

We had ARFH and the other one that came too was an NGO, but with the collaboration of Ministry of Women Affairs and Community Development. There were also some religious organisations that do come around. (Yeye, female teacher of ML in an urban area)

Furthermore, in the account of several IIL teachers, large-scale HIV/AIDS campaigns did not target IIL and were thus inaccessible to them due to a communication gap. Another reason why

large-scale HIV/AIDS campaign did not reach IIL was social exclusion mentioned by four teachers:

When you talk of communication; it is the communication gap. And the system of communication they use, special children are not carried along. You get what I am saying now? Our own society has forgotten that they are living members of the society, so they care less about them. For them to be carried along, the media has to use appropriate communication methods. (Shosa, male teacher of IIL)

But these MR, their parents just lock them up in the home. They bring them to school when they have time. They don't give them proper care because they know they cannot gain anything from them (Sisi, female teacher of IIL)

4.5.5 Effective sexuality and HIV/AIDS education for IIL

Involving schools and teachers: Eleven teachers opined that school should be the platform for sexuality and HIV/AIDS education for IIL. The formal teacher training in the education of learners with intellectual impairment is not sufficient to teach HIV/AIDS and sexuality. As a result, teachers need to be equipped with the necessary skills to teach these topics:

The highest population of people with intellectual disability can only be found in schools (Kemi, female teacher of IIL)

So if there are workshops or seminars for teachers to retrain on this matter, it will be better. (Enitan, female teacher of learners with disability)

Use of visual and concrete objects: Because PWID don't learn incidentally, they should be taught about HIV/AIDS issues with interactive teaching aids and methods as mentioned by 9 (75.0%) of IIL teachers:

We may use videos related to that kind of thing so that they will see because these children you are looking at can only learn through concrete objects: what they see and practise. (Mopelola, female teacher of IIL)

Collaborations between stakeholders: Success depends on collaborations between all stakeholders, but schools should provide a platform that holds the efforts together by introducing tailored HIV/AIDS education programmes into the curriculum. This, in the opinions of seven IIL teachers, would ensure cooperation, commitment, and reinforcement of HIV/AIDS information:

And when you want to pass the information, the parents and the community should be involved. When you call the parents, community, teachers, and the children; where the parents are faulty, the teachers will readily help. But it should first be taken to the schools because the highest population of people with intellectual disability can only be found in schools. (Kemi, female teacher of IIL)

Language: In addition, five teachers thought that they had to be taught in simple language and concepts had to be repeated often. Euphemisms can confuse them and should therefore be avoided:

I talk to them straightaway because there is no shortcut to it for them. Because if you are trying to find a shortcut and giving them the education as if you are shy of saying it, they won't understand. (Kemi, female teacher of IIL)

Teaching by using the play method in small groups: According to four teachers, they should be provided with HIV/AIDS information at the appropriate intellectual functioning level and in small groups, using drama/play methods supplemented by questions and answers:

We could group the age together and educate them. (Mopelola, female teacher of IIL)

They understand through play method. When they are watching movies now if you ask them questions like "what did you see there"? "What did you understand from that"? Then the information can be disseminated to the mentally retarded. (Sisi, female teacher of IIL)

4.6 Conclusion

The findings of this study indicated that IIL reported more sexual activities, risky sexual behaviours, and occasional substance abuse than ML. Teachers considered IIL more vulnerable to HIV infection because they were wrongly labelled hypersexual, were more exposed to sexual abuse, stigmatisation, poverty, and parental neglect. Moreover, because condoms were less available to IIL due to their disability, they reported lower condom use than ML. Despite their higher vulnerability to HIV infection, IIL had less access than ML to HIV education through schools, external organisations, as well as general HIV campaigns. IIL face more barriers in accessing healthcare, including HIV-related services, than ML. Thus, their HIV awareness, knowledge, risk perception, and use of HIV-related services were lower than those of ML. In addition, the I-Change Model was more relevant in predicting sexual abstinence among IIL than ML, and most of its results were influenced by the motivational factors and intention.

CHAPTER FIVE

DISCUSSIONS

5.1 Introduction

This chapter discusses the research findings and their implications. It is divided into four sections: psychological measures, demographics and socio-behavioural characteristics; the findings grouped into themes. Discussions of the psychological measures precede demographics and socio-behavioural characteristics of learners, which are then followed by those about the themes that emerged from the findings of the study. Common themes from the questionnaire, FGDs, in-depth and key informant interviews are integrated to give wider perspectives on the findings.

5.2 Psychological measures

In order to establish the intellectual function of the learners in this study several assessments were used. The DAP, VSMS, CPM in the IIL group and SPM in the ML group. As discussed earlier the valid and reliable measurement of intellectual function is difficult across cultures and one way to improve reliability and validity is to triangulate several measures. In this study the learners performance on the DAP was in keeping with what was expected – the ML mean score was 24.69 and IIL mean score was 8.10. On the Ravens Progressive Matrices the mean score for the ML was 29.72 and 19.30 for the IIL group. This was again consistent with the respective functioning. Finally the responses from VSMS also provided further support of the learners' intellectual functioning (see Tables 4.3, 4.4 and 4.5). All measures established that the ML intellectual function was within the normal range and that the IIL functioning was in the mild to moderate range of mental retardation.

5.3 Demographics and socio-behavioural characteristics

5.3.1 Demographics

The IIL were significantly older than the ML; they had a mean age of 16.3 and 15.3, respectively. The age distribution of participants was such that more of the IIL fell within the age group 15-19 (52.8%), whereas more of the ML fell within age group 12-14 (57.1%). Although there are no previous studies that compare IIL and ML in Africa, this may be due to the fact that mild/moderate IIL either start school late or are slower in achieving educational milestones as a result of their low cognition (APA, 2000; WHO, 1996). Hence, they are more likely to spend more time in school than typically developing adolescents. Furthermore, the ratio of male to female participants was about 1:1 for ML and almost 1.5:1 for IIL, reflecting the higher prevalence of males with intellectual disability (APA, 2000).

5.3.2 Socio-behavioural characteristics

Learners with intellectual impairment were significantly less likely to report having boy/girlfriends than the ML, $\chi^2(1) = 15.92; p < 0.001$. This corroborates the findings of previous studies in that PWD generally (Chen et al., 2002) and those with intellectual disability specifically (Nunkoosing & John, 1997) are not usually desirable to the non-disabled for dating and marriage. According to Chen et al. (2002), this is worse in cultures that believe that disability is a result of parents' past sins, which is the case in Nigeria (Ademokoya & Ben-Stowe, 2007). The finding that IIL are less likely than ML to report having boy/girlfriend can also be explained in another way, namely parental overprotection among female IIL. For example, a teacher commented about a female IIL: *"They bring her to school in the morning and come for her in the afternoon. Immediately she gets home they lock her up. No social interaction"*. However, parents may be justified in shielding girls from potential sexual exploitation and abuse (Howland & Rintala, 2001). Unfortunately, the desire to be loved may subject women/girls with disabilities to sexual exploitation and higher risk of HIV infection, as

further indicated by Howland and Rintala (2001). The need to equip them with skills to recognise and avoid sexual abuse and exploitation is therefore crucial.

Among the learners that reported sexual activity in the last six months, 18 (37.5%) and 30 (62.5%) were IIL and ML respectively – despite the fact that most (61, or 77.2%) of IIL who reported being sexually experienced could not remember when they last engaged in sexual intercourse. This finding reveals that learners with intellectual disability are as sexually active as their non-disabled peers, and also need sexuality and HIV education. The reported age (13-16) of sexual debut for most (44, or 64.7%) of the sexually experienced participants that could remember the age at which they had sex for the first time is, in both groups, similar to the national finding that most adolescents initiate sex by age 15 (National Population Commission (NPC) [Nigeria] & Macro, 2003). In addition, the range was between 7 and 19. Children do engage in sex at very young ages in Nigeria, as reported by Mabayoje et al. (2005), where 6.7% of their sample initiated sex below age ten. Their finding was attributed to the effects of westernization and schooling away from home. In societies where sexual permissiveness is rampant as reported in another study in Cameroon (Mburano, 2002), this could also have caused early-age sexual initiation. In the current study early-age sexual initiation could also be due to curiosity or experimentation. However, it indicates that age-appropriate sexuality information and education must be provided to children early, and should be sustained as they grow up. This has been shown to be beneficial because comprehensive sexuality education targeted at younger adolescents who haven't yet initiated sex has been effective in delaying their sexual debut or promoting safer sexual practices versus providing such education to sexually active adolescents (Maticka-Tyndale et al., 2007; Paul-Ebhohimhen et al., 2008; Rusakaniko et al., 1997; Siegel et al., 2001). This brings to light the difficulty in changing established sexual behaviours in sexually active adolescents.

Intellectually impaired learners (29, or 78.4%) were significantly more likely than their non-disabled peers (8, or 21.6%) to have reported that their first sexual partners were much older. All of the IIL that reported much older first sexual partners were female. Gilbert (2007) also reported that most (67.0%) of her IIL sample that reported older first sexual partners were female. The fact that they were all female is of great concern because such relationships could be dangerous,

even for non-disabled girls, due to their lack of negotiating skills and power to ensure condom use (Bralock & Koniak-Griffin, 2007). This has dire implications for girls with intellectual disability, who, like other girls with disability, are socially marginalised, want to be accepted and loved, and may at the same time lack sufficient social skills to handle relationships (Howland & Rintala, 2001; Wazakili et al., 2006).

Teachers in this study confirmed that older sexual partners do sometimes sexually abuse or exploit female IIL: *“We had followed a learner to an herbalist’s house; an elderly man having sex with her”*. Perpetrators were usually persons that knew the girls well and could take advantage of their disability to lure or coerce them into sexual activities. This also points to the general expectations of society that people with intellectual disability should submit and comply to all requests and demands because of their disability. In contrast, non-disabled female learners willingly had older sexual partners because of financial/material gains: *“Some parents cannot meet the needs of their daughters which lead them to join groups that will introduce them to big boys who can cater for their immediate needs”*. Gilbert (2007) also showed that the main reason girls with intellectual disability had older first sexual partners was due to sexual abuse/rape, whereas this kind of relationship was for financial/material gain for their non-disabled counterparts (Okpani & Okpani, 2000). Thus, girls with intellectual disability are at higher risk of violence, becoming involved in imbalanced relationships and not being able to use condoms, all of which could expose them to HIV infection more than non-disabled girls.

5.4 Themes emerging from the findings

5.4.1 Sexual behaviours

5.4.1.1 Sexual experience/abstinence among learners

Learners with intellectual impairment were five times significantly more likely to be sexually experienced than mainstream learners. Learners with intellectual disability are therefore more exposed to HIV infection. The null hypothesis is rejected. The rate of reported sexual experience among IIL in this study, 26.0%, is comparable with the 25.0% by Gilbert (2007) and is higher than the 14.0% by Dawood et al. (2006). The higher rate of sexual exposure among IIL than ML observed in this study may be strongly connected to the higher incidence of sexual abuse among female IIL, as pointed out below. It is also possible that ML had underrated their sexual activities. However, it has been documented elsewhere that African males are more likely to overrate their sexual activities (Khaaya et al., 2002).

Interviews with teachers of IIL also revealed that they recognised the sexuality of their learners, despite their disability, and they acknowledged that the learners were sexually active and could be at risk of HIV infection. However, the sexual expression of IIL was labelled as excessive, inappropriate, and abnormal.

Sexual intercourse is traditionally private. The privacy of sexual intercourse is a socially constructed phenomenon. Both disability and sexuality are socially constructed (Barnes & Mercer, 2003; Weeks, 1986; Rubin, 1984). According to Weeks (1986) and Rubin (1984), although sexuality can be viewed as partly biological, it is a product of social and historical forces and biology does not determine its content, experiences and institutional forms. However, PWID do not learn incidentally, and, unless taught how, they are less likely to comply with socially constructed norms without being taught. In addition, disability, as argued by Barnes and Mercer (2003), is also socially constructed with heavy reliance on social barriers and power relations. It is on this basis that persons who do not conform to the socially accepted ways of expressing or experiencing sexuality are labelled 'deviants', particularly when such persons also experience disability. Moreover, PWID are often denied access to privacy. Hingsburger and

Tough (2002) argue that persons with intellectual impairment can learn to express sexuality in socially acceptable ways if they are given access to privacy.

Therefore, the combination of non-conforming to what is socially constructed as ‘normal’ expression of sexuality coupled with lack of private places for sexual activities could explain why learners with intellectual disability in this study are perceived to be hypersexual. Non-disabled adolescents have privacy and would not have sex in the open where others can see them, thus it is not possible to determine the frequency of their sexual activities. Therefore, if PWID are given the same opportunities and are taught to distinguish between private and public places, their sexual expression may no longer appear ‘abnormal’.

In addition, learners who were in intimate relationships were about 19 times significantly less likely to be sexually abstinent than their peers who were not. Previous studies show that adolescents’ early romantic relationships are associated with sexual experience (B.C. Miller et al., 1986; Thornton, 1990; Yoon, 2004), and steady relationships based on trust could lead to unprotected sex (Manuel, 2005). Interventions should include strategies for delaying romantic relationships. This will help adolescents avoid early sexual activities until they are mature enough to handle such. Alternatively, they could be taught skills to delay sexual intercourse in intimate relationships.

In separate (ML and IIL) logistic regression analyses of socio-behavioural, motivational, informational, and awareness factors of the I-Change Model, sexually experienced IIL were 904 times significantly more likely to have boy/girlfriends than their sexually abstinent peers. However, sexually experienced ML were only six times significantly more likely to be in intimate relationships than sexually abstinent ML. This finding reveals that IIL in intimate relationships are more exposed to sexual activity and HIV infection than ML in such relationships. Marginalisation, social exclusion, sexual abuse and exploitation, and lack of sexuality education and social skills to handle such relationships may cause IIL to be more exposed to potentially risky sexual encounters (Di Giulio, 2003; Wazakili et al., 2006; Hanass-Hancock, 2008).

Efforts must be made to bridge this gap through developing tailored sexuality and HIV prevention interventions for adolescents with intellectual impairment that also comprise public enlightenment to address stigmatization, marginalization and sexual abuse of persons with intellectual disabilities. An important aspect of such educational programmes is to teach how and why it is advisable for learners to delay intimate sexual relationships till they are fully prepared for them. They should also be taught how to differentiate between different types of relationships and their implications. This is important because, as E.J. Brown and Jemmott (2002) suggest, persons with intellectual disability understand things literally, and observing an intimate sexual relationship between two people who call themselves 'friends' may cause them to perceive that sexual intercourse is a normal part of any friendship. Moreover, those who are already sexually experienced have to be equipped with the skills necessary to protect them from STIs, including HIV.

Furthermore, adolescents who were not sexually abstinent were two times significantly more likely to be female, indicating a higher risk of HIV infection among girls than boys. However, in separate logistic regression analyses of I-Change Model constructs for IIL and ML, female IIL were eight times significantly less likely to be sexually abstinent than their male counterparts. This is in contrast with previous African studies that reported that male adolescents were more sexually experienced than females (Matasha et al., 1998; Owolabi et al., 2005; Taylor et al., 2003). However, African females are socialised to be passive in sexual matters, and a study reveals that girls can easily be pressured into having sex (Feltey et al., 1991), especially when in a stable relationship. This is particularly prevalent if the male partner is older and financially stable and/or the girl is intellectually impaired. As will be discussed later, this study reveals that financial/material gain is the principal motive for non-disabled girls to have older male sexual partners, whereas with intellectually disabled girls it usually involves coercion. In both scenarios, there is an unbalanced power relation which does not favour girls. On the other hand, if a boy in an intimate relationship decides not to engage in sex, it is possible for him to stand by his decision since he wields more power in the relationship in an African context. Tailored sexuality and HIV/AIDS education of IIL should be gender sensitive, with specific focus on teaching assertive skills in relationships and, for girls with intellectual disability, the focus should also be on skills to avoid sexual abuse and exploitation.

In addition, learners in age group 15-19 were two times less likely to be sexually abstinent than their younger colleagues. The finding is corroborated by the assertion of D.W. Brook, Morojele, Zhang, and Brook (2006), namely that the proportion of sexually experienced adolescents increases with age, and it is rare to find youth who have not had sex by age 20. However, this indicates that younger adolescents should be targeted by sexuality and HIV education before they initiate sex, as discussed earlier.

Additionally, this study finds that adolescents attending schools in less urban areas are significantly more likely to be sexually experienced than those in urban areas. Separate analyses of IIL and ML using I-Change Model constructs revealed that IIL in less urban areas were more likely to be sexually experienced than those in the urban areas. It is possible that II girls in less urban areas may face more sexual abuse and exploitation than those in the urban areas because of higher prevalence of negative attitudes and traditional beliefs that support stigmatisation and/or discrimination against persons with disability in line with the social construction of disability. For example, Abang (1998) observed that unequal opportunities are afforded to persons with and without disabilities in Yorubaland no matter their position in the society. In addition, PWD are considered to be evil and suffering from their past sins, according to Ademokoya & Ben-Stowe (2007). As a result, PWD may be seen as persons who deserve to be oppressed or violated as a way of paying for their sins. It has also been documented that PWID are perceived as soft targets for sexual abuse and usually declared as unreliable witnesses due to the nature of their disability (Kvam & Braathen, 2008; Dickman & Roux, 2005). Therefore, it may be more difficult to seek and obtain justice in the less urban areas such that cases of sexual abuse of PWID could easily go unpunished.

Moreover, the finding that no significant association exists between sexual experience and HIV knowledge scores confirms again that knowledge does not always translate into safe sex practices. Adolescents with intellectual disability (like their non-disabled peers) need to be taught skills that build their self-efficacy in practising safe sex. But drawing again on the social construction of disability (Barnes & Mercer, 2003), their self-efficacy around sexuality is limited not only by cognitive shortcomings but also by how other's view youth with disability and hence limit their space of opportunity to act in terms of sexuality and relations, for example by isolating

them or by choosing sexual partners for them as documented by this thesis. Hence interventions targeted at increasing the sexual self-efficacy should also target the community by raising their awareness about the sexuality of persons with intellectual disabilities.

5.4.1.2 Reasons for having sex

The findings of the study indicated that learners have sex due to the following reasons:

Natural sexual urges and attraction: Natural sexual urges were identified as the reason why all humans, regardless of disability, have sex. However, the expression of sexual urges was considered abnormal in adolescents with intellectual disability, as indirectly noted by a teacher: *“It’s the urge; it’s just that they can’t control it”*. By reducing IIL’s sexuality to merely being natural urges, IIL were judged to be incapable of emotional involvement attributed to ‘normal’ sexual expression. As noted by Hingsburger (1990), the application of an ‘inappropriate sexual behaviour model’ wrongly reduces PWID’s expression of sexuality to being merely biologically driven.

However, learners with intellectual disability were capable of developing emotional and loving relationships with their peers just like their non-disabled colleagues, and their sexual activity was not solely due to biological sex drive, as suggested by some teachers. Such relationships could also be judged to be symbiotic and not exploitative, unlike in relationships with older non-disabled persons. For example, a 17-year-old girl with mild intellectual impairment fondly revealed symbiosis in her relationship with her peer with intellectual disability: *“I like Feyi because if he sends me one child that I should buy him something, I do. And he also buys me things once in a while”*.

Symbiotic relationships between persons with intellectual disability could be more beneficial to them because they function at the same level and neither partner is misleading the other about their intentions. These relationships will probably also reduce their sense of rejection and loneliness. However, it may be advisable to have a trusted, non-judgemental adult give them guidance in the relationship. In addition, it would be advantageous if such a guardian is

knowledgeable about and committed to issues relating to intellectual disability. Teachers could play this role in providing individualised, tailored sexuality and HIV education, instead of encouraging parents to arrange and/or force sexual partners on their children with intellectual disability, as reported in the study. They should be allowed to make their choices, but under guidance if necessary.

Physical attraction: Natural sexual urges were reportedly triggered by physical attraction to the opposite sex with non-disabled adolescents. Temin et al. (1999) also reported physical attraction as the primary reason for sexual activities among their non-disabled adolescent sample. As one female teacher described:

Adolescence is a period whereby so many opposite sex notice the beauty. At that stage it is like a flower. You know a beautiful flower attracts insects, and the beauty at that tender age attracts so many of them.

The bodily changes that accompany puberty enhance the beauty of non-disabled female adolescents and make them attractive to males. The same was not reported about female adolescents with intellectual disability. In addition, PWD are often perceived as unattractive because they do not meet the societal norms for ‘beauty’, and are not desired as dating and marriage potential (Chen et al., 2002). The combination of minimal sexual experience and sexual needs among PWD could lower sexual esteem (Taleporos & McCabe, 2001b) and lead to risky behaviours in an attempt to find acceptance and keep a sexual partner (Howland & Rintala, 2001).

Pleasure/enjoyment: All learners, regardless of disability, reported deriving pleasure from having sex and it was also why they continued to have sex. This finding was similar to those documented by other studies regarding that pleasure is a reason for sexual activity among adolescents (Etuk et al., 2004; Moronkola & Fakeye, 2007-2008; Nwankwo & Nwoke, 2009). Adolescents should therefore be encouraged and taught skills to delay their sexual debut or practise safe sex.

'Sex enhances beauty' – a misconception: Ignorance about the reasons for the bodily changes occurring in females at puberty made adolescents in less urban areas link the resulting beauty at that period to sexual intercourse. During a FGD in a less urban area, girls related that: *“Some girls believe that sex will make them big and their buttocks will shoot out”*. Incidentally, many of the adolescents initiated sex during puberty (13-16 years), as revealed by the quantitative data. This kind of misconception could encourage indiscriminate sexual activities among adolescents; hence the need to initiate sexuality education before puberty occurs so as to clarify the reasons for the enhanced beauty at puberty.

To seal their love: Non-disabled girls in intimate relationships had sex to demonstrate their love and commitment, whereas boys used sex to keep girls in a relationship, even when they were mistreating such girls. This finding reflects internalisation by both boys and girls of the double standards in sexual relationships in Africa whereby males are permitted to cheat on their sexual partners and females are expected to be committed and submissive (Kaaya et al., 2002). It suggests that if a boy decides to have multiple partners, a girl will stay committed to him because she would not want to leave her partner and thus be perceived as a bad girl. However, she may be exposing herself to STIs, including HIV infection.

Parental and societal influences: Stigmatisation exists regarding marrying PWD and the societal expectation/pressure to bear children encourages parents to arrange sexual partners for their children with intellectual disability without giving them the choice to make their own decisions about their intimate sexual relationships. Teachers, who are also stakeholders and could influence the parents, often encouraged parents to arrange sexual liaisons for their children with intellectual disability. A teacher described their involvement in this phenomenon:

Many times we have counselled the parents that they should look for somebody who can impregnate her. If she is having a child of her own, even if heaven falls and the siblings don't like her, her child knowing that this is my mother, and normal child, will help and take care of her even when the parents have gone. The same thing we tell the other parents too.

Because such arrangements are often forced on adolescents with intellectual disability, it amounts to a violation of their rights to manage their reproductive health. This presents a challenge similar to that with the issue of forced sterilisation. It also carries a high chance that the children will contract HIV because parents, out of desperation to quickly find marriage/sexual partners for their children, are not likely to investigate the sexual history of arranged sexual partners.

Parental influence on their children's sexual choices took many forms with non-disabled adolescents. Adolescents either modelled the sexual promiscuity or permissiveness of parents or had sex because of a lack of parental supervision and control in broken homes. Previous studies corroborate this finding (Babalola et al., 2005; Dittus & Jaccard, 2000; Hayes, 1987).

Peer pressure: The study finds that peer pressure causes sexual activity among both IIL and ML because they want to be accepted by their peers. Other studies among non-disabled adolescents also reported this finding (Etuk et al., 2004; Moronkola & Fakeye, 2007-2008; Nwankwo & Nwoke, 2009). The implication may be more serious for adolescents with intellectual disability, as they crave the acceptance of their non-disabled peers and may have poor judgement and lack the social skills to manage such pressure. A girl with intellectual disability explained her experience of peer pressure by a non-disabled close friend during an in-depth interview:

She said my mummy is fond of locking me up not allowing me to go out; that I am just indoors watching TV instead of going out. She will say she is going out. And if she asks me to follow her to her boyfriend I always refuse.

Experimentation: Boys in this study reported that they had sex just to learn how it feels or to test their fertility. Similar findings were documented among adolescents in Nigeria (Mabayoje et al., 2005; Nwankwo & Nwoke, 2009; Orji & Esimai, 2005), especially among young boys below age 10 (Mabayoje et al., 2005). A male who wants to test his fertility will not use condoms and thus stands the chance of becoming infected with HIV. Moreover, if pregnancy results, they are not likely to take kindly to it because they are not ready for fatherhood.

Exposure to media and pornographic materials: Another reason for increased sexual activities among adolescents in this study was exposure to explicit sex through access to media and pornographic materials; this has also been documented in other earlier studies (Adebayo et al., 2006; Egbochuku & Ekanem, 2008).

Financial/material gains and poverty: Financial/material gains were reported as reasons why some female adolescents had sex, particularly those whose parents were poor. The girls then looked for older men who could cater for their financial needs. However, because those men are older, they are more likely to be HIV positive (National Population Commission (NPC) [Nigeria] & ORC Macro, 2003). The power relations (Bralock & Koniak-Griffin, 2007) that accompany financial benefits may make it difficult for girls to negotiate safe sex, as expressed by a teacher: “*For some of them maybe it is because of the finances at home. They believe that this is my boyfriend that is financing me; he must have that*”.

5.4.2 Predictors of sexual experience/abstinence among learners

5.4.2.1 Predictors of sexual experience/abstinence among IIL

Most of the results of the I-Change Model in predicting sexual abstinence among IIL in the study are affected by motivational factors and intention. Positive attitudes, social support, and self-efficacy to practise sexual abstinence significantly prevented sexual intercourse. This finding corroborates a previous study in which attitudes, perceived social influences and self-efficacy were also found to predict smoking (Huver, Engels and de Vries, 2006). Creating strong social support system and positive attitudes towards sexual abstinence may be positively used to encourage or guide IIL to delay sexual activity till they are ready for it. According to Lesseliers and Van Hove (2002), interactions between personal factors, lack of social supports and low status in society could increase the chances of abuse of persons with intellectual disabilities. This could again be tied to the importance of awareness-raising to dispel the myths around sexuality of PWID that are the roots of stigmatisation of these individuals. However, intervention programmes should be mindful not to use these strategies to suppress or restrict appropriate sexual expression by IIL as observed in this study. Suppressive attitudes towards the sexuality

and sexual expression of persons with intellectual disabilities increase their vulnerabilities to sexual abuse and make them miss learning opportunities (Lesseliers & Van Hove, 2002)

Additionally, positive attitudes towards sexual abstinence should be promoted. The traditional system of education in Nigeria is known to lay emphasis on teachings that encourage healthy sexual attitudes (Ojo & Fasubaa, 2005). This could be achieved by soliciting the involvement of stakeholders such as parents and teachers. Jacobs et al. (1989) in sharing the principles for developing HIV prevention education for persons with intellectual disabilities stress the importance of changing the attitudes and values of participants because information alone is not sufficient in changing behaviours.

Also, to strengthen IIL's self-efficacy, trainings should focus on developing skills to help IIL not only to delay sexual debut, but also to recognise and avoid sexual abuse and exploitation. In contrast to the general beliefs by relevant stakeholders (teachers) in this study that IIL cannot learn about HIV prevention, there are accounts of such programmes that have been successful when properly simplified and adapted to suit their cognitive abilities. Jacobs et al. (1989) advise that trainings on self-efficacy for persons with intellectual disabilities "necessitates that they learn everything they need to know in a manner that is as simple and concrete as possible" in order to avoid confusion. Thus, if trainers have relevant expertise IIL could be trained to improve their self-efficacy in relation to sexual abstinence.

Predisposing, awareness, and motivational factors and intention are constructs of the I-Change model that significantly predicted sexual abstinence among IIL in this study. However, only two items of cues to action ('severity of HIV' and 'knowing one's HIV status') predicted sexual abstinence in the awareness factors construct. Other items of cues to action, namely 'knowing someone with HIV' and 'outcome evaluation', did not significantly predict sexual abstinence but because they appeared in the final model, they played a role in explaining the model. However, another study found that items on the social influence, awareness, outcome expectations and intention constructs of I-Change Model significantly predicted HIV testing among in-school adolescents in South Africa (Taylor et al., 2007). In addition, the informational factor, 'radio not source of HIV information', appeared in the final model but did not significantly predict sexual abstinence. Moreover, other awareness factors such as 'knowledge of HIV transmission' and

'HIV risk perception' did not predict sexual abstinence at all because they did not appear in the final model. This finding is supported by another from the qualitative data that despite radio and television being the main sources of HIV/AIDS information among learners, they still believed that they didn't know as much as they should know about HIV/AIDS. It then suggests that electronic media do not seem to be effective in educating adolescents about HIV/AIDS. Also, Oyo-Ita et al. (2005) in a study to assess the impact of HIV/AIDS awareness programmes on students found that although mass media raised the awareness of secondary school adolescents in Calabar, Nigeria, the knowledge of HIV/AIDS was poor. They thus concluded that mass media are not effective in increasing knowledge of HIV/AIDS among adolescents and suggest the involvement of parents, teachers and health workers in educating the youth about the infection/disease.

Furthermore, there may be other reasons for the results. Firstly, knowledge alone is not capable of changing behaviour (Jacobs et al., 1989). And for IIL, this is exacerbated by their lack of access to HIV prevention education and subsequent low HIV knowledge. Risk perception may also be compromised by their tendency to deny personal risk to HIV due to its fatal nature, as suggested by Jacobs et al. (1989). In addition, outcome expectation will largely depend on their having prior knowledge about HIV, which was virtually absent in this case. Further, the electronic media such as radio and television may be providing HIV/AIDS information in formats that are not accessible to PWID. Lastly, knowing someone with HIV requires a high level of HIV awareness, which was lacking among IIL. Therefore, since self-efficacy was found to predict sexual abstinence there is the need to capitalise more on this by providing training that equip IIL with skills to either abstain or adopt safe sex practices in addition to accessible HIV/AIDS information.

Moreover, tension accompanies discussions of sexual behaviours among persons, regardless of intellectual disability, and this invariably makes them resist making any changes to their sexual activities (Jacobs et al., 1989). Finally, sexual abstinence is a behaviour that has no alternative unlike sexual activity which could be practised in a safe manner. Jacobs et al. (1989) suggest that giving up behaviour is easier to accomplish if you are substituting it with another behaviour that is almost as gratifying as the original behaviour. These constructs of the I-Change Model may

then be more applicable to safer sexual behaviour (e.g., condom use) than sexual abstinence. On the other hand, sexual abstinence may be more difficult to adopt than safe sex. However, this does not mean that these constructs are not beneficial in interventions focussing on sexual abstinence among IIL.

Furthermore, the informational factors appear to have no relevance in predicting sexual abstinence among IIL. This is probably because the messages from the electronic media and books are targeted at people of average to high cognitive ability. They are usually very ambiguous for persons with low cognition. Additionally, relevant stakeholders who could provide HIV/AIDS and sexuality information to IIL do not possess the necessary skills to do so. An alternative way of reaching them is to provide tailored information through schools.

Overall, the I-Change Model presents a good theoretical framework for tailored sexuality and HIV prevention education for in-school adolescents with intellectual impairment, particularly in terms of the sexual abstinence component of comprehensive sexuality education that is being used in Nigerian schools. However, provision must also be made for those IIL that are already sexually active by teaching them skills to protect themselves from HIV infection. This could also be tested using the I-Change Model. Sexuality and HIV prevention education that focuses only on sexual abstinence could be targeted at younger II adolescents who are yet to initiate sex.

5.4.2.2 Predictors of sexual experience/abstinence among ML

Like for IIL, predisposing, awareness and motivational factors and intention constructs of I-Change model predicted sexual abstinence among ML. This is consistent with previous studies that utilised I-Change model to predict smoking and HIV testing among adolescents (Taylor et al., 2007; Huver, Engels and de Vries, 2006). But unlike among IIL, informational factors also predicted sexual abstinence among ML. This gives an indication that ML had access to more channels that are being used for HIV information than IIL. For example, teachers educate ML about HIV more than IIL probably because there is HIV and sexuality education in the school curriculum of ML. Also, books and newspapers are more accessible to ML than IIL.

Additionally, sexually abstinent ML were more likely to depend on books and newspapers as sources of HIV information. This may be because information from these sources are more comprehensive and reliable and has thus helped these adolescents to abstain from sex as a way of preventing HIV infection. Teachers as source of HIV information also predicted sexual abstinence though the effect was not statistically significant. Currently in Nigeria, abstinence is the only preventative method adopted in the FLHE curriculum, and it is possible that this is helping adolescents, particularly the younger ones, to abstain from sex. Sexually abstinent ML were less significantly less likely to receive HIV information from church/mosque. Mba, Obi and Ozumba (2007) also found that churches/mosques in Nigeria do not give reproductive health information. It is also possible that churches/mosques in Nigeria are not currently active in giving HIV information or they selectively give such information when they suspect sexual activities among certain adolescents. Learners should be encouraged to cultivate reading habits which could give them access to reliable HIV prevention information.

Not having boy/girlfriends was significantly six times more likely to prevent ML from sexual experience than having boy/girlfriends. In addition, non-use and occasional use of alcohol and not knowing someone living with HIV were predictors of sexual abstinence in this study. The findings corroborate those of Kabiru and Eze (2007) that current engagement in romantic relationship, regular use of alcohol and knowing someone living with HIV were predictors of sexual experience. The authors recommend that these factors should be taken into consideration when developing abstinence promotional interventions for adolescents.

Self-efficacy and intention significantly predicted sexual abstinence among ML, signifying that if learners are well equipped with skills to abstain from sex it will be of great help in holding on to their intention to remain sexually abstinent until they are ready. Interventions focussing on sexual abstinence in adolescents should therefore include trainings on life skills.

5.4.3 Higher risk of HIV infection among IIL than ML

5.4.3.1 HIV/AIDS awareness of learners

The results show that IIL are significantly less likely to have heard of HIV/AIDS than the ML. The null hypothesis is rejected as a result. This is plausible considering that large-scale HIV/AIDS campaigns are not in formats that are accessible to this group of learners because, as pointed out by Groce (2004b), HIV/AIDS programme developers lack an understanding of disability issues and therefore do not target PWD. Moreover, PWD, and especially PWID, are being denied sexuality and HIV/AIDS education by all stakeholders (Di Giulio, 2003; Milligan & Neufeldt, 2001; Wazakili et al., 2006) because they assume that it will make them more promiscuous (Hanass-Hancock, 2009b; Rohleder & Leslie, 2009).

However, this study finds no significant difference between IIL and ML who reported having boy/girlfriends and those who were sexually experienced, confirming teachers' selective exposure of IIL to HIV/AIDS education on the grounds of suspected sexual experience: *"It is only when we notice that something is going wrong with them. Then, we ask the females, did anybody touch your breasts? That is when we teach them"*.

5.4.3.2 HIV transmission knowledge of learners

Learners with intellectual disability demonstrated significantly lower knowledge of modes of HIV transmission than mainstream learners. The alternative hypothesis is accepted. In addition, IIL were more likely than non-disabled persons to hold inaccurate beliefs about how HIV is transmitted, for instance, through kissing, and sharing a toilet or cup with infected persons. McGillivray (1999) also documents low HIV knowledge among PWID compared with non-disabled persons in Australia. In Africa, low HIV knowledge has been reported among learners with intellectual disability although those studies did not compare the results with HIV knowledge of non-disabled learners (Dawood et al., 2006; Olaleye et al., 2007). On the contrary, Gilbert (2007) reported high knowledge of HIV among her sample in South Africa. The author reports that her participants had prior exposure to HIV/AIDS education, which proves that HIV

education in the appropriate format can actually increase HIV knowledge of learners with intellectual disability.

As already discussed above, HIV/AIDS education does not target PWID, and they are also being denied such information by parents, teachers and other stakeholders. The current Family Life and HIV Education programme in Nigerian schools only targets non-disabled learners (NERDC, 2003). As a result, IIL in Nigeria are being discriminated against in terms of HIV/AIDS and sexuality education.

5.4.3.3 HIV risk perception of learners

With a mean score of 6.5 out of a maximum of 9, learners generally demonstrated relatively high HIV risk perception. However, intellectually disabled learners had significantly lower HIV risk perception scores than ML. The null hypothesis is rejected. In addition, learners with alternative living arrangement versus living with both parents obtained significantly lower HIV risk perception scores. Incidentally, IIL were also disproportionately represented among those with alternative living arrangements than ML. This finding aligns with a study in the US which also reported low HIV risk perception among PWID (E.J. Brown & Jemmott, 2002).

It is not surprising that a high HIV risk perception score is significantly associated with a high HIV transmission knowledge score. So, the low risk perception of IIL could be attributed to their low HIV knowledge. Teachers of IIL also thought they may be at higher risk of HIV infection than the non-disabled and other PWD due to their low HIV risk perception, which was linked to their cognition-related disability, as reflected in this statement:

They can't think wisely like that. The MR, their thought can't reach that. They don't even know they can get HIV. Those that can think like that are the blind and the physically challenged because they can reason.

However, E.J. Brown and Jemmott (2002) argue that even when learners with intellectual disability are well aware of their HIV risk, their desire to be accepted by sexual partners might

make them surrender to risky sexual behaviours. This stresses the impact of a conflict between fear of discrimination and acknowledgement of HIV risk by PWID, and for PWD generally. It is then advisable that HIV prevention education for this group must include skills to handle sexual marginalisation and how to prioritise what is important to them. They need to understand that the pain of discrimination/marginalisation is an immediate phenomenon and can be overcome, whereas the devastating effects of HIV infection will not appear immediately and are permanent.

In addition, a high HIV risk perception score was significantly associated with having a boy/girlfriend among all learners. This suggests that having a boy/girlfriend may bring about acts that could predispose adolescents to HIV transmission. However, the lack of association between HIV risk perception and sexual experience is surprising. Most likely, these adolescents are in denial about their risk of HIV infection or are not fully aware of the connection between sexual intercourse and HIV transmission. Interventions should target HIV risk perception to improve learners' sexual behaviours. Similar findings were reported in the US (Mattson, 2002) and Nigeria (Nwokocha & Nwakoby, 2002), in which students perceived themselves as immune to HIV infection despite reporting unprotected sex. However, counselling is beneficial in reducing young people's risky sexual practices (Mattson, 2002).

Teachers of ML believe that their learners' low HIV risk perception stems from the low priority the learners give to HIV and the assumption that HIV education is an attempt to discourage their sexual activities. The same view was expressed by female learners in a FGD, one of whom declared that their peers do not believe that HIV is real: *"Some people call HIV/AIDS "American Invented means of Depriving people of Sex. So they think that AIDS is just to deprive them of sex. Some think that AIDS is not even real"*. Jacobs, Samowitz, Levy, and Levy (1989) also suggest that low HIV risk perception is possible in persons with mild/moderate intellectual disability because those with mild or borderline intellectual impairment may deny personal HIV risk due to its fatal nature, and moderately intellectually impaired individuals may be unable to associate risky behaviour with HIV infection. Even if adolescents acknowledge that HIV is real, they believe that they are too young to contract it. A 15-year-old male ML who had sex when he was 13 commented about his first sexual partner: *"I know she can't have it because she is still*

young”. This is a form of rationalisation in the face of a fatal condition, and must not be taken for granted. Adolescents must be made aware that anybody, young or old, can contract HIV.

This presents a challenge because most participants did not know of a non-disabled person infected with HIV, and cases of persons with intellectual disability being infected with HIV were not expected. Therefore, to reinforce HIV messages, it may be necessary for HIV education interventions to include modelling of persons of all ages infected with the virus.

Although age was significantly associated with the HIV risk perception score in the bivariate analysis, its effect was poorly significant after controlling for confounders in the multivariate analysis. This suggests that age does not significantly determine HIV risk perception scores. The probable confounder here is whether they are intellectually impaired or mainstream learners.

5.4.3.4 Risky sexual exposures among learners

Inconsistent condom use with boy/girlfriends: Despite a significant association between inconsistent condom use with a boy/girlfriend and intellectual impairment in the bivariate analysis, intellectual impairment was not a predictor of inconsistent condom use with a boy/girlfriend after controlling for confounders in the multivariate analysis. The null hypothesis is thus accepted in this regards. The confounding effect may be due to reports of having boy/girlfriends or not. Girls and Christian learners were significantly more likely to practise inconsistent use of condoms with boy/girlfriends than boys and Muslims, respectively. Other adolescent-centred studies also report lower condom use among female adolescents than males (Kaaya et al., 2002). According to them, in Africa this may be aggravated by the double standard that encourages women to be passive and men to be virile or domineering in sexual matters. As such, girls and women may not be comfortable negotiating condom use.

This is corroborated by other findings of this study, particularly in that the fear of being labelled as promiscuous was a barrier to condom use among sexually active non-disabled girls: *“Ha, it is difficult to ask a man to use it. They would think this girl must be promiscuous”*. They believed that the decision to use condoms rested with males, as indicated by this statement: *“It is his responsibility to have condom”*. Although saddled with the decision to use condoms, sexually

active non-disabled boys lacked the skills necessary to negotiate condom use and rather used their authority to force their sexual partners to use them if this is what they wanted: *“I can’t tell her. I will use it. It is not compulsory to tell her. I will just use it and she must agree”*. These findings show that non-disabled girls are more vulnerable to STIs and HIV infection than their male peers. Both parties involved in sexual activities should have the right to make decisions regarding their sexual health, but this is being hampered among Nigerian adolescents due to the patriarchal nature of the society. It is doubtful whether boys actually use condoms as reported considering a previous study that indicated the urgency with which adolescents approach sex, whereby participants reported that using condoms wastes time (Temin et al., 1999).

The nature of adolescent relationships is another factor to be considered. Studies have shown that adolescents’ low condom use is associated with steady relationships that are judged to be based on trust and love (Manuel, 2005; Temin et al., 1999). Moreover, adolescent girls in relationships with older men may lack the power and skills to negotiate safe sex (Bralock & Koniak-Griffin, 2007).

It is interesting to note that Christianity was significantly associated with inconsistent condom use with boy/girlfriends. This may be based on the expectation of the partner’s trustworthiness in the relationship, which is common with most religions. It may not be appropriate to explain this finding by saying that churches give information about condom use to adolescents more than mosques. A study in Nigeria found that only 3.3% of the respondents reported to obtain reproductive health information, including family planning from churches whereas none got such information from mosques (Mba et al., 2007). The authors concluded that most churches do not give reproductive health information to adolescents. Another possible explanation of the finding is that IIL are more represented among Christians (56.9%) than among Muslims (42.1%), and none of the sexually experienced IIL reported consistent condom use with boy/girlfriends. It is therefore possible that the observed association between Christianity and condom use with boy/girlfriend is mainly accounted for by the IIL. Being socially excluded and marginalised, condoms are less available to IIL than ML, as confirmed by one of the qualitative data findings of this study. It is also a possibility for socially excluded or marginalised groups like PWD to seek solace in churches more than non-disabled persons; first, for acceptance and second, for the

possibility of getting cure for their disabilities which is a very common perspective in Nigeria. This aspect of getting cured of disabilities is also an aspect of the medical model of disability (Barnes & Mercer, 2003) which emphasises ‘difference’ and the need for PWD to conform to ‘normalcy’. In addition, unprotected sex with peers and non-disabled to gain acceptance of their sexual partners has been documented among PWID (E.J. Brown & Jemmott, 2002; Hanass-Hancock, 2009b). So, church-going IIL may be having unprotected sex to satisfy and keep their sexual partners. To support this, Koniak-Griffin, Lesser, Uman and Nyamathi (2003) found that in the US, unprotected sex was associated with frequent church attendance among minority groups.

As would be expected, inconsistent condom use with boy/girlfriends was associated with low HIV transmission knowledge scores. The finding is in line with a previous study in Nigeria which documents low knowledge of condom use for the prevention of HIV infection among in-school adolescents in Nigeria (Oyo-Ita, Ikpeme, Etokidem, Offor, Okokon & Etuk, 2005). A plausible explanation is that learners that are unaware of the HIV transmission routes, and hence the possible preventive options would tend to have unprotected sex. Another finding of this study reveals that boys who initiated sex at younger ages (13-15) reported no knowledge of safe sex at the time of their sexual debut: “*I wasn’t aware of condom the first time I had sex*”. This further stresses the importance of starting comprehensive sexuality education at an early age.

Inconsistent condom use with casual partners: Learners with intellectual disability were 20.24 times more likely to use condoms inconsistently with casual partners than mainstream learners. The null hypothesis is rejected in this respect. This is probably so for girls, particularly because they lack opportunities to form intimate relationships, are overprotected by parents or want to be loved and accepted, which give opportunities to men who are only out to exploit and dump them, as found by Howland and Rintala (2001). In such instances, women and girls with disability find it difficult to negotiate safe sex, even when they have the skills to do so. According to Howland and Rintala (2001), the tendency to be overly agreeable in order to keep a sexual partner usually overrides the need for safe sex. This behaviour carries a high risk of HIV infection.

For all learners in general, inconsistent condom use with casual partners was poorly significantly associated with low HIV risk perception. This suggests that there are other factors at play. It is

possible that because sex with casual partners is usually unplanned, learners do not have the opportunity to negotiate condom use (Paz-Bailey et al., 2003), despite the fact that they are aware of their risk to HIV infection. Moreover, the finding that inconsistent condom use is not significantly associated with not having a boy/girlfriend is an indication that adolescents have sex with other partners when they are in stable relationships. Again, because such sexual encounters are not always planned, the opportunity to use condoms may diminish.

Condom use during last sexual activity: Being intellectually disabled was significantly associated with no condom use during last sexual activity, indicating the participants' current condom use. Thus, the null hypothesis is rejected in this regard. Findings further reveal that condoms are less available to adolescents with intellectual disability than non-disabled adolescents. In addition, they are less available to II girls than their male colleagues: *"I have never seen a condom before and nobody has ever used it with me"*. This means that II girls are less likely to practise safe sex than II boys.

The negative attitude of II boys towards condom use (*"Is it a good boy that has condoms?"*) and the reported difficulty in obtaining them due to disability-related stigma (*"It is not easy to obtain. They will be making jest of you saying, you too are using condoms with your condition."*) again stress how PWID's sexual expression is suppressed. Additionally, sexually active II boys lacked the skills to negotiate condom use: *"No (smiles)...I can't ask my girlfriend to let us use condom"*. Adolescents with intellectual impairment are therefore less likely to practise safe sex and may be exposed to HIV infection. Girls are at a greater disadvantage. Dawood et al. (2006) also identify lack of self-efficacy in using condoms, condom availability and the association that using condoms signals mistrust in a partner as reasons for low condom use among IIL. According to them, these issues should form part of a comprehensive sexuality and HIV education programme for adolescents with intellectual disability.

In addition, learners with high HIV transmission knowledge were significantly less likely to have used condoms during their last sexual activity. This further confirms that possessing knowledge does not always translate into safe sexual practices, as noted by Olayinka and Osho (1997). Low condom use among adolescents may not only be due to decreased pleasure, as claimed by adolescents in this study: *"Young people feel more comfortable having sex 'flesh-to-flesh'"*

because condom will reduce their enjoyment”, but also be attributed to the misconception that condoms may burst and cause injury. These ideas have been documented by other researchers (Abdulraheem & Fawole, 2009; Temin et al., 1999). The fact that adolescents believe that condoms may burst implies that they do not know how to wear them correctly.

Another reason for not using condoms may be attributed to the society’s disapproval of adolescents’ sexuality. Some non-disabled adolescents in this study reported not being bold enough to buy condoms. Therefore, such boys obtain them through friends, whereas girls send children to buy condoms for them. Often, boys that were brave enough to buy condoms reported that they asked for them using alternate names like ‘umbrella’, ‘bulletproof’, ‘cd’, or even a popular brand name e.g. ‘Gold Circle’. Intellectually disabled boys are less aware than their non-disabled peers of alternate names that they can call condoms when buying them. Regardless of society’s disapproval, adolescents are having sex and will continue to do so. It is thus pertinent to safeguard their health by approving the use of protective methods. In addition, the sexuality of adolescents with intellectual disability in Nigeria should be acknowledged and tailored sexuality education should be provided so that they can learn how to stay healthy.

Multiple sexual partners: Furthermore, this study reveals that IIL are significantly less likely to have multiple sexual partners than the non-disabled. The null hypothesis is rejected with respect to multiple sexual partners. However, 20.3% of learners with intellectual impairment reported having multiple sexual partners, which is higher than the 7.0% documented in a previous study (Gilbert, 2007). It is possible that the rate by Gilbert (2007) is lower because her sample reported having been exposed to sexuality and HIV education prior to the study. Teachers also reported that ML could be at risk of HIV infection due to having multiple partners:

They don’t have specific husbands, and due to boy/girlfriend relationships, they don’t have specific boyfriends. They may have 3 or 4 and by that they will not know who and who that have contracted the disease.

However, teachers of IIL do not identify multiple sexual partners as a risk factor for HIV infection among IIL. This could be because teachers of IIL are not aware of or do not believe

that their learners could have multiple sexual partners. Such underestimation could have a negative effect on the provision of sexuality and HIV education to IIL.

It is surprising that learners who reported sometimes/rarely having multiple sexual partners also had low HIV risk perception. This could be because these learners assume that they are not at risk of HIV infection as they do not have more than one sexual partner or they are in denial. The failure to link HIV infection to sex with one sexual partner is misleading and dangerous since unprotected sex with a single partner also carries the risk of HIV infection.

Number of sexual partners in the last six months: Mainstream and intellectually impaired learners did not differ significantly in the number of sexual partners in the last six months although the trend indicated that mainstream learners were more likely to have had more than one sexual partner. The alternative hypothesis is rejected in this regard. This finding should, however, not be taken to mean that learners with intellectual disability are equally at risk of HIV infection as mainstream learners because there are other factors that make them more vulnerable to HIV infection than ML.

Generally, male learners were three times significantly more likely to report more than one sexual partner in the last six months than female learners. Higher rates of multiple sexual partnering among male adolescents have been documented by previous studies in SSA (Kaaya et al., 2002) and Nigeria (National Population Commission (NPC) [Nigeria] & Macro, 2003). In addition, according to Kaaya et al. (2002), the cultural expectations for women to be submissive and passive and for men to be virile and to initiate sex may cause women to under-report their sexual activities and vice versa for men. Looking at it from another angle, for this same reason, African men tend to have more social/cultural support for engaging in multiple sexual partnerships.

As expected, learners with more than one sexual partner in the last six months were significantly more likely to have high HIV risk perception scores. The finding indicates that learners recognise the link between HIV transmission and having multiple sexual partners. This area could be targeted more in HIV awareness programmes for adolescents, and be coupled with the message that even unprotected sex with only one partner carries the risk of HIV infection.

Sexual abuse and exploitation: This study finds that although the reported history of rape is higher among females with intellectual disability, it is not significant when compared with their counterparts without disability in the bivariate analysis. However, after controlling for confounders in logistic regression analysis, girls with intellectual impairment are almost four times significantly more likely to report a history of rape than non-disabled girls. Age is a likely confounder in this case. The result is further confirmed by teachers in the study who shared what they knew about sexual abuse and exploitation of their female IIL learners. Though it has been reported that sexual abuse is common among females with intellectual disability (Gilbert, 2007; Hanass-Hancock, 2009b) and it has been suggested that the rate should be higher among PWID than the non-disabled (Groce, 2004b), to date there has been no direct comparison between the two groups in this regard.

The high sexual abuse of female adolescents with intellectual impairment has many causes. Girls with intellectual disability are soft targets for sexual abuse because the nature of their disability makes it difficult for them to assess and avoid violent situations or abusive relationships (Rouso, 2003); report sexual abuse to trusted adults (L.M. Mitchell & Buchele-Ash, 2000); and receive justice from the courts for sexual abuse because they are perceived as incompetent witnesses (Dickman & Roux, 2005). Most perpetrators of sexual abuse are aware of these factors and capitalise on them, targeting girls with intellectual disability. In addition, findings from both quantitative and qualitative methods suggest that perpetrators of sexual abuse of girls with intellectual impairments are older men, with higher likelihood of being HIV-infected. For example, 78.4% of reports of older first sexual partners that is much older were from IIL. Also, a teacher gave an account of sexual abuse of female IIL as follows: '*We had followed a learner to an herbalist's house; an elderly man having sex with her*'. Gilbert (2007) also reported sexual abuse of girls with intellectual impairments by men who are much older. Addressing sexual abuse of PWD should be an urgent issue in this era of the HIV pandemic, especially as the myth that men can be cured of HIV by sleeping with virgins is widespread (Groce & Trasi, 2004). Because of the belief in PWD's asexuality, they are often targeted for sexual abuse and thus have increased risk of HIV infection. To support this argument, a recent South African study reported an HIV prevalence of 14.0% among female adolescents with a history of sexual abuse (Meel, 2009).

Learners who reported past sexual abuse were significantly more likely to be female and to have higher HIV transmission knowledge scores. The finding that girls are almost ten times more likely to have a history of sexual abuse points to their higher vulnerability to HIV infection than boys. Moreover, Raj, Silverman, and Amaro (2000) report an association between sexual abuse and other risky sexual behaviours, including previous exposure to sexual activity among female adolescents. More than half of the participants in this study (44, or 64.7%) initiated sex between age 13 and 16 (see Table 3), suggesting that older adolescents are more likely to be sexually experienced. This finding is corroborated by previous studies in Nigeria that also documented that older adolescents are more inclined towards sexual activities than the younger ones (Egbochuku & Ekanem, 2008; Slap et al., 2003). This may also explain the significant association between an older age and sexual abuse observed in this study. Interventions should target young adolescents before they make their sexual debut. The fact that sexually abused adolescents knew a lot about HIV transmission points to the likelihood of exposure to HIV information following sexual abuse.

5.4.3.5 Substance abuse

Learners with intellectual disability are better represented than ML as occasional users of cigarettes (9, or 75.0%) and alcohol (23, or 74.2%), but less represented as users of marijuana (2, or 33.3%) in the study. This finding supports the reports of Brown and Jemmott (2002) regarding that the use of illicit drugs is uncommon among PWID but that alcohol abuse rates are high. Previous studies on substance use among young PWID have to date yielded conflicting results. Some researchers report that they use substances less than the non-disabled (E.J. Brown & Jemmott, 2002; McCrystal et al., 2007; Rurangirwa et al., 2006) while others report differently (Blum et al., 2001). The findings of this study are similar to the findings of Blum et al. (2001) which document that learners with intellectual disability occasionally use alcohol and cigarettes more than the non-disabled. However, with regard to marijuana (33.3%), the finding is similar to other research that reports less substance use among II adolescents than non-disabled adolescents. It could be argued that because marijuana is a higher substance than alcohol and cigarettes, learners with intellectual disability in this study have less access to it.

Further analysis does not yield any significant differences between the number of sexual partners in the last six months and the use of cigarettes, alcohol, marijuana and other hard drugs. Additionally, no significant association is found between condom use during last sexual activity and the use of cigarettes, alcohol, marijuana, and other hard drugs.

These findings do not suggest that substance use among learners, particularly those with intellectual disability, should be taken lightly because the possibility exists that these risky behaviours can get out of hand. The more frequently alcohol is used, the more likely it is that adolescents with intellectual disability will practise risky sexual behaviours such as having unprotected sex (E.J. Brown & Jemmott, 2002). Thus, the findings deserve the attention of stakeholders who desire to stem these types of behaviour.

McGillicuddy (2006) also points out that substance use among intellectually disabled persons may result in short attention spans, distortion of abstract cognitive concepts and overly compliant dispositions which may increase the occurrence of substance abuse-related problems. Although this can occur in anybody, it may have worse implications for the already compromised cognitive ability of individuals with intellectual impairment. In addition, there are potentially negative drug-drug interactions between alcohol and some of their prescription drugs.

Moreover, substance abuse is a predictor of sexual activities among adolescents generally (Kabiru & Ezeh, 2007). Substance abuse also predisposes adolescents to risky sexual practices such as unprotected sex (Raj, Reed, Miller, Decker, Rothman & Silverman, 2007).

5.4.4 Disability-related stigmatisation and neglect

Children with intellectual disability and people close to them, like parents and teachers, are stigmatised by the society. The study reveals that children with intellectual disability are undesirable and parents try to hide them from other people. People also believe that having contact with children with disability could result in giving birth to disabled children. Consequently, even male education supervisors of reproductive age resisted being posted to

serve in special schools to avoid contact with children with disability. A teacher related her experience as follows:

Even some supervisors rejected to be posted here. They will say “ha, iyawo mi nbimo lowo o: e ma ko ba mi” (ha, my wife is still having children, don’t endanger my life).

Moreover, teachers of children with disability reported that they were assumed to share similar characteristics with their learners, which sometimes made other teachers not want to relate with them. Naturally, parents bear the brunt by being scorned by neighbours for having children with disability. Parents therefore try to hide such children from the public to avoid being reproached, thereby preventing IIL from engaging in social interactions that could expose them to HIV information.

On the other hand, female adolescents with intellectual disability in this study lacked opportunities for social interaction that could enhance their social skills and expose them to potential partners because of parental overprotection. This has been identified as a subtle way of stigmatising PWD rather than demonstrating actual care (Howland & Rintala, 2001). By being so overprotective, parents assume and/or conclude that PWD are less capable. However, parents may sometimes be justified in being protective, especially when they are ignorant about how to provide sexuality education to their children with intellectual disability. This emphasizes the need to provide parents with the necessary training so that they can be hands-on in the sexuality education of their children with intellectual disability. Most of them will give their children more freedom for social interaction if they are sure that these children can manage potentially dangerous situations.

Furthermore, the study indicates that stigmatisation of children with disability results in parental and institutional neglect. Parents of children with intellectual impairment usually dump them with grandparents to avoid being seen with them:

But most of the parents are not interested. Most of the children are living with their grandparents. Like the case of the girl I just mentioned, the mother is above 50 years. After the death of the father, the mother is having a workload of the so-called ‘normal’

ones that she neglected this one. So she rarely takes care of her, but she is taking care of the other ones.

Parents may even prefer that they die so that they are free of the reproach of having a child with intellectual disability, as discovered in this study: *“The parents don’t care about them to take them to hospitals. Some parents even want them to die so that the shame will be covered”*. This is corroborated by findings from Nigeria and elsewhere about families’ negative attitudes towards PWID (Abasiubong et al., 2008; Shrestha & Weber, 2002).

Furthermore, as revealed by this study the stigmatisation and low value placed on children with intellectual impairments made parents expose them to sexual exploitation by arranging sexual partners for them. This is reportedly being done by parents to get non-disabled children as compensations for having children with intellectual impairments. Under such conditions, the probability that parents will be selective to the point of considering the implication for HIV infection in such relationships is low. Apart from exposing IIL to HIV infection, their sexual and reproductive rights are being violated through such acts.

In addition, due to stigmatisation by society, IIL are viewed as persons undeserving of good romantic and marital relationships. This perception limits their choices of intimate sexual partners. A teacher put it this way: *“At times the children marry old women because they know that nobody that is alright will marry them”*. Such choices may be emotionally, physically and sexually abusive because their partners may think they are doing them a big favour by being with them. It may also encourage or serve as an excuse for parents to arrange sexual partners for these individuals against their will as noted above.

The low value placed on children with disability also manifests as neglect by educational authorities. They reportedly assigned low priority to matters related to learners with disability and denied them their rights, including their right to HIV education. This may be linked to negative attitudes of various leaders. According to Bardon and Corbin (2006), policy-makers’ attitudes towards PWID influence policy implementation and the availability of services for this group of individuals. As a result, Lang and Upah (2008) lament that disability issues in Nigeria

are still more charity-orientated than rights-orientated. An education official was quoted by a teacher as saying:

At a time in the Ministry, our employers said “Kilode? E ma ni walara jare. Awon omo ti won gbadun gan an awon teachers won o ni wa lara to bayi.”(What is the matter? Don’t trouble us please. Even the teachers of healthy children are not making life unbearable for us this much). And these people are being deprived of various rights. So if you ask for any HIV information about handicapped; less privileged. Forget about that.

Thus, the stigma of disability and the resulting neglect can deny children with intellectual disability access to HIV-related services at all levels, which in turn increases their vulnerability to HIV infection. Moreover, this study indicated that PWD who tested positive may suffer double stigmatisation and, for this reason, they were reluctant to take an HIV test:

First, he has a stigma of being a disabled person. For him to take himself to that level again he will say it is too much on him/her, and would prefer even to die than to add another stigma.

Disability generates stigmatisation, and so does an HIV-positive status. Thus it is not surprising that persons with intellectual disability are more reluctant to take an HIV test because they fear being further stigmatised. This is made worse by the stigmatisation of PWID by the health workers reported in this study, which is also a reflection of the society to which health workers belong: *“HIV/AIDS clinics don’t want to see them. They will say, you? You come for this test? Even the present problem you are having is enough for you”*. Health workers’ negative attitudes towards PWID have been documented in the literature (Krahn et al., 2006). Health workers ignoring diversity (i.e. disability) may be linked to their lack of disability knowledge as their training does not include that (Stanley, 1998). Thus, they are practically not different from the general population in their views of PWD generally in relation to sexuality.

With this kind of mindset existing among individuals in a position to affect educational policies, it will be difficult to convince them to see why they should prioritise sexuality and HIV education and related services for learners with intellectual disability. All Nigerians need to

orientate themselves to promoting the human dignity of PWD. Intervention programmes should incorporate strategies to enlighten the public about disability and PWD, with the aim to reduce the stigmatisation of PWD. When developing intervention programmes for PWD, people that spearhead such programmes should not be selected based solely on their expertise, as those that we think should be sensitive to disability issues may not know or be sensitive to disability matters. Rather, people involved in such programmes should have a broad knowledge of the field, as well as have demonstrated commitment to disability issues.

5.4.5 Access of learners to HIV/AIDS prevention education and services

The awareness of HIV/AIDS among learners was universal for ML and about 90.0% for IIL, but learners reported and demonstrated inadequate knowledge of HIV/AIDS. This is consistent with previous studies (Oyo-Ita et al., 2005; Wodi, 2005). The shallow knowledge of HIV/AIDS is also reflected in their HIV risk perception, sexual risk-taking and other factors that could increase their risk of HIV infection as shown above. Most learners could not differentiate between HIV and AIDS and did not know the signs and symptoms of AIDS. This was worse for IIL. Similar to a finding of Oyo-Ita et al. (2005), the reported principal sources of HIV information by learners were radio and television. According to the authors, mass media are only effective in creating awareness about HIV/AIDS but lack the required depth of knowledge about the topic. Teachers also confirmed this, as one ML teacher put it:

Because of their age and exposure; they are not well exposed. Nobody comes to talk about HIV/AIDS to them one-on-one except when they hear on the news media. Hardly will their parents talk about it at times. Around this area, they believe it is a taboo when a mother is talking about sex and all sorts.

This suggests that for the mass media to be effective in bringing about positive sexual behaviours, they have to be combined with individualised education is also provided by parents. However, due to cultural reasons, parents were not prepared to do such. Moreover, many parents probably lack the skills to provide appropriate HIV information to their children. This could be

worse for II adolescents, who are often neglected by their parents. Besides cultural reasons, many stakeholders lack the skills to provide appropriate sexuality education to II adolescents.

Moreover, ML and their teachers in this study reported that most of the information that they had about HIV/AIDS revolves around the transmission routes of HIV and the fatal nature of the infection. The most commonly mentioned transmission route is sexual intercourse. It seems that due to the disapproval of adolescents' sexuality by the society, sexual intercourse is focussed on as the route of HIV transmission with emphasis on HIV infection's fatal nature in order to discourage sexual activities among adolescents. While this is good, it is not enough and may not be effective to curb the spread of the infection if not coupled with safe sex approaches for adolescents that are already sexually active. Despite teachers' disapproval of adolescent sexual relationships, learners were being involved in sexual activities. Merely providing information has failed to help the learners, as expressed by a female counsellor and teacher of ML, but teachers generally did not recognise this as their emphasis continues to be on providing more information:

But you know some of them, for just a short period they will break and then re-engage. They are back into in; maybe because there is no follow-up. So I think they still need more intensive knowledge about it. They need intensive knowledge and they need care and a kind of follow-up even if there is anything at all.

Additionally, this study reveals a connection between too much emphasis on sexual transmission of HIV and HIV test uptake. ML expressed reluctance to take an HIV test because they fear being labelled as promiscuous if they test positive. Although HIV is predominantly transmitted through unprotected heterosexual encounters in Nigeria (Pennington, 2007; UNDP, 2004), because too much emphasis is placed on this transmission route, people hardly attribute HIV infection to other transmission routes. As a result, they label anybody who is HIV positive as being promiscuous. This, combined with the fatal nature of the condition, increases the already high stigmatisation of people infected with HIV, and thus discourages HIV test uptake.

Learners reported less information about HIV test, prevention and treatment and desired to know more about these, including mother-to-child transmission. HIV/AIDS information targetted at adolescents should therefore focus also on these aspects as well. It is therefore not surprising that

most learners reported being aware of only hospitals as HIV testing centres: *“hospitals; they only told us about hospitals”* and, because hospitals are associated with sickness, healthy adolescents would not visit them for HIV screening:

It is only when they are sick and now begin to have signs and symptoms that are related to AIDS that they go to hospitals and are asked to take HIV test.

This link between hospitals and sickness was one of the main reasons why adolescents did not visit them unless they were already suffering from severe HIV-related illnesses. Educating adolescents about availability of alternative testing centres, particularly youth-friendly ones, is likely to improve their HIV test uptake. In contrast, II girls were virtually unaware of any HIV testing centres. This may be due to their lack of access to HIV information, which was only available in inappropriate formats for PWID. Their male counterparts were more aware of testing centres, probably because they socialise more and had better access to such information, whereas girls may be subjected to more parental overprotection and hence social exclusion.

Based on the teachers’ responses, they seemed not to realise that merely teaching about the issues is not sufficient to bring about behaviour change, and teachers and other stakeholders have to consistently be reminded that education alone has failed to help adolescents manage their sexuality. Stakeholders need to acknowledge adolescents’ sexuality and equip them with skills to either delay intimate relationships till they are ready to handle them or to avoid sexual intercourse in such relationships. Those who are already sexually active and not ready to practise secondary sexual abstinence should be taught skills to protect themselves against STIs and HIV.

Furthermore, teachers of mainstream learners were not aware of Family Life and HIV Education (FLHE) in the school curriculum (*“it is not in the school curriculum”*), except those that taught subjects into which it was infused at the junior secondary school level: *“It is in the school curriculum. Now, for the JSS 1 last term there was something on AIDS and STIs under their Basic Science curriculum”*. The FLHE currently does not target older adolescents in senior secondary schools. Moreover, it was not considered a priority and was generally viewed as a moral issue which regular schools sometimes featured in Literary and Debating Clubs, extracurricular activities and moral instruction: *“We teach them as part of their moral instruction*

in the morning assembly". In addition, younger teachers felt more comfortable teaching such subjects than older teachers, who were more conservative because of moral and religious beliefs. However, as one male teacher put it, implementation of HIV education will only be effective if it is enforced by the government and supported by teacher training. This finding corroborates a previous study in Nigeria that found that although teachers possessed high knowledge of HIV preventative measures, they did not pass the same across to learners due to social and cultural inhibitions, as well as a lack of training and motivation on information, education and communication related to HIV/AIDS and sexuality education (Oshi, Nakalema, & Oshi, 2005). The findings were very surprising and, coupled with the low level of HIV/AIDS-related knowledge of ML, leave one in great doubt about the effectiveness of the national FLHE in Oyo State secondary schools.

Further to receiving teacher training, teachers will have to overcome their conservatism regarding sexuality and HIV/AIDS education if the current FLHE is to be effective and impact positively on the sexual behaviours of in-school adolescents and thus prevent them from contracting HIV.

In contrast, sexuality and HIV education was completely missing in the curriculum of IIL:

We have not been including sexuality education in our own curriculum with these special children by now. We are not teaching them.

This is a reflection of the belief that they are asexual or hypersexual and do not need such education. Sexuality was only taught haphazardly, at teachers' discretion, namely when they suspected IIL's sexual activity:

It is only when we notice that something is going wrong with them. Then, we ask the females, did anybody touch your breasts? That is when we teach them.

or when they reached adulthood:

Starting from 18 years and above, if you see that this boy/girl is mature enough, we always tell them don't do this; don't do that.

The content of such sexuality education was restrictive, encompassing warnings, misinformation and corporal punishment to instil fear and desexualise them. A female teacher justified the rationale behind misinforming the learners:

We make them believe that any sex is pregnancy. Because if you don't let them believe that any sex is pregnancy it becomes a free for all because they love it. And because sex has no meaning to them, we have to put fear in them.

This kind of misinformation may have a negative impact because they may learn that having sex does not always result in pregnancy, and thus engage in risky sexual practices secretly. The danger of HIV exposure could be higher under such conditions. Moreover, if they have been so misinformed, any attempt to re-educate them and teach the right thing will confuse the learners.

Moreover, findings of the study reveal that with the non-disabled the only plausible HIV prevention method is strict sexual abstinence:

At times they will ask questions about how to go about it. But what we do tell them is that at their age total abstinence is the only thing that they need.... In fact, we will not even emphasise the issue of using condom at their age, no! But we just tell them, you keep away from opposite sex.

This is in line with the FLHE curriculum. Thus, teachers that do not mind teaching about safe sex are helpless. This may benefit the sexually inexperienced to an extent, whereas the sexually active learners are left without any help.

Besides the FLHE, few religious groups and non-governmental organisations (NGOs) reach out to ML regularly, and when they do, they give preference to schools in the urban areas. The study further reveals that learners with intellectual disability are totally marginalised by such efforts: *"They don't come! Never! I have been here for the past 16 years. Just only ARFH organised seminar for us teachers to teach these pupils"*. This may be because HIV/AIDS programme developers lack knowledge about disability and how to appropriately target this group (Groce, 2004b). Teachers of learners with disability are rarely targeted and it is assumed that they possess the skills to adapt the standard HIV/AIDS education to suit their learners with disability.

They fail to realise that it takes more than the regular special education training to teach HIV/AIDS education to learners with different types of disability (Birch et al., 2002). The teachers, after receiving such HIV education, selectively pass on the information to learners with disability with minimal adaptation and doubtful effectiveness, but do not know how to teach HIV issues to IIL:

But we have been introducing HIV/AIDS to the deaf, and the blind can hear what is going on in the society. They know that if you do this thing without using condom you can get HIV. The deaf also have been shown different pictures. But the MR (mentally retarded) cannot interpret the pictures to know what is going on in their community.

The findings are similar to those of Christian et al. (2001) in that, although members of staff were willing to support the sexuality of clients with intellectual disability, they were hampered by the lack of appropriate skills. This lack of skills to pass on HIV information to IIL also marginalised them more than other learners with disability. However, teachers in this study demonstrated the general and/or basic skills required to teach IIL although they seemed not to know how to apply the skills in the context of HIV and sexuality education. The effective methods suggested by the teachers include:

Use of visual and concrete objects: Incidental learning does not apply to persons with intellectual disability; therefore using visual teaching methods and concrete aids that they can interact with is useful. Evidence of the effectiveness of such can be seen in the programme developed by Johns (2007), which is currently in use in the Western Cape, South Africa. Using this method, IIL can be taught explicitly and information is therefore retained.

Simple, direct language: They have to be taught using simple, direct language and concepts have to be repeated. Euphemisms can be confusing and thus should be avoided. Johns (2007) also proves this. Unambiguous language should be adopted for clarity. Clear and concrete words also need to be adopted because IIL understand things literally (E.J. Brown & Jemmott, 2002). Thus, vague phrases will confuse them.

Teaching using the play method in small groups: They should be provided sexuality and HIV/AIDS information at an appropriate intellectual functioning level, in small groups, using drama/play and question and answer methods. Previous intervention programmes have demonstrated the effectiveness of group work (Lumley & Scotti, 2001). Apart from providing a platform for interactive sessions, working in small groups also takes heterogeneity in learning ability into account by grouping persons of the same intellectual functioning together (Newens & McEwan, 1995). In addition, as individuals with the same intellectual functioning could still be heterogeneous to an extent, questions should be directed to each member of the group in turn to ensure that everybody's information needs are met (Newens & McEwan, 1995).

Collaboration between stakeholders: A successful sexuality and HIV/AIDS education programme for IIL requires collaboration between teachers, parents, communities, intellectual disability and HIV/AIDS experts, and political leaders and/or administrators. Upfront, political leaders/school administrators should be enlightened about the subject so they can make informed decisions about how to introduce tailored sexuality and HIV/AIDS education into the school curriculum. Other researchers have pointed out how necessary this is (Birch et al., 2002). However, the expertise of researchers in the field of intellectual disability and HIV/AIDS will be needed to develop tailored interventions based on research about this group and effective interventions. In addition, relevant stakeholders like teachers, parents and researchers may need to advocate the development of such tailored interventions as the negative attitudes of leaders can hinder service availability and policy implementation to support PWID (Bardon & Corbin, 2006). Such advocacy can sensitise administrators to the need to ensure implementation of sexuality and HIV/AIDS education after it has initially been introduced.

Moreover, parents and the community have to be involved from inception of the intervention programme because, as Birch et al. (2002) argue, parental and community ignorance about the vulnerability of adolescents with disability to HIV infection, as well as their conservative approach to HIV education, can negatively impact on such programmes. Such partnerships with parents and the community have been shown to strengthen programmes, particularly in countries where a large proportion of II adolescents live with family members within the communities (E.J. Brown & Jemmott, 2002).

In addition, collaborations between administrators and agencies or experts responsible for HIV/AIDS education is crucial because the lack of it has been shown to result in ineffective implementation of such education at classroom level (Birch et al., 2002).

Training of teachers: Training special educators in HIV prevention was indicated as being crucial to classroom implementation of HIV/AIDS education. Previous studies have pointed out the need for this because the general special education is not adequate for HIV education (Birch et al., 2002). When they have this expertise, they can function better.

Lack of access to HIV services for PWID is not limited to HIV information. As found in this study even health workers may not be able to communicate with them: *“When they go outside, health workers would not understand them”*. This is also noted by Stanley (1998). Because health workers’ training does not include disability issues, they are unlikely to have alternative ways of communicating with adolescents with disability. Even parents sometimes do not learn how to communicate with their children with disability. Access to medical care, including HIV-related services, may then be compromised. Such marginalisation of PWID in accessing HIV-related services has also been speculated about in Nigeria (Olaleye et al., 2007). It is thus pertinent for health workers to be trained on ways of providing accessible services, including HIV-related services to persons with different forms of impairments.

Finally, findings of this study indicate that large-scale HIV/AIDS campaigns meant for the general population are not appropriate for IIL because of the ambiguity of the language used:

And the system of communication they use, special children are not carried along. You get what I am saying now? Our own society has forgotten that they are living members of the society, so they care less about them. For them to be carried along, the media has to use appropriate communication methods.

Such campaigns do not recognise the need to reach all citizens and this may be because society at large believes that PWD are asexual. It is therefore necessary to provide IIL with HIV education in a format that they can understand.

5.5 Challenges encountered in conducting FGDs among IIL

As mentioned under data collection section, a few FGDs could not be conducted among IIL due to non-response or non-participation in the discussions. They consented to the study and did not raise any objection about the FGD. But according to Woodring et al. (2006), persons with intellectual impairments do have difficulty in following a conversation with multiple speakers or complex social dynamics. In addition, they sometimes do have short attention span. The same authors also confirmed that disclosure of sensitive or potentially stigmatising information could be a concern for persons with intellectual disability. Therefore, it is possible that the learners were afraid of discussing sensitive matters like sex in the school environment, particularly in a situation where expression of sexuality is often discouraged as reported by few of their teachers. The latter line of thought could be corroborated by a case of a participant of one of the unsuccessful FGDs who responded well during a one-on-one in-depth interview immediately after the FGD.

Another possible explanation for the unsuccessful FGDs may be that the participants did not have much to say about the topic (Flynn, 1986) due to limited experience or they lacked the grammatical capacity to articulate it. This happened in one of the FGDs where a participant had something to say but found it very difficult to express herself adequately.

5.6 Conclusion

Having discussed the findings, the next chapter will summarise and outline policy implications of the study. It will also suggest guidelines for developing tailored sexuality and HIV/AIDS education for IIL before closing with recommendations for future research.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

Chapter six summarises the main findings of the study with reference to its objectives and hypotheses; as well as the relevance of the I-Change Model in predicting sexual abstinence among IIL. The policy implications of the findings; thereafter, suggestions are made regarding developing sexuality and HIV/AIDS prevention education for mild/moderate IIL in Nigerian schools. In addition, the limitations and strengths of the study experienced during the research fieldwork are highlighted. Finally, recommendations for future research in the field of intellectual disability and HIV/AIDS are made, and it closes with a brief comment about the study.

6.2 The study – a recap

The study started by establishing the differences in intellectual functioning of IIL and ML by utilising Raven's Progressive Matrices, Draw-A-Person, and Vineland's Social Maturity Scale. It then identified and compared HIV knowledge, attitudes, and sexual practices among mild/moderate IIL and ML in the school setting. In addition, the study investigated the contextual factors informing these and suggested guidelines for a school-based HIV intervention for IIL. The literature review examined the issues around disability, intellectual disability, adolescence, and HIV/AIDS. Particular emphasis was placed on HIV/AIDS and its implications for individuals with pre-existing intellectual disability.

The aims of the study were achieved by addressing specific objectives, which were to:

1. Assess and compare the level of HIV awareness (about its existence) among IIL and ML
2. Assess and compare the level of knowledge of HIV transmission among IIL and ML
3. Assess and compare the degree of perceived risk to HIV infection among IIL and ML
4. Identify and compare risky sexual behaviours among IIL and ML
5. Assess and compare the prevalence of sexual abstinence among IIL and ML
6. Investigate the contextual factors informing HIV knowledge, sexual practices, risk perception and sexual abstinence among IIL and ML
7. Test the relevance of the I-Change Model in predicting sexual abstinence among IIL
8. Identify how effectively each group of learners is being reached by HIV/AIDS outreach programmes
9. Make recommendations to health and education policy-makers and programme managers about accessible HIV/AIDS and sexuality education formats for learners with intellectual impairment in Nigeria

Furthermore, the following null and alternative hypotheses were also tested:

1. There is no significant difference between IIL and ML with respect to HIV/AIDS awareness – H_0
There is a significant difference between IIL and ML with respect to HIV/AIDS awareness – H_1
2. There is no significant difference between IIL and ML with respect to knowledge of transmission of HIV – H_0
There is a significant difference between IIL and ML with respect to knowledge of transmission of HIV – H_1
3. There is no significant difference between IIL and ML with respect to prevalence of sexual abstinence – H_0
There is a significant difference between IIL and ML with respect to prevalence of sexual abstinence – H_1
4. There is no significant difference between IIL and ML with respect to risky sexual behaviours – H_0

Significant differences exist between IIL and ML with respect to risky sexual behaviours – H_1

5. There is no significant difference between IIL and ML with respect to perceived risk of HIV infection – H_0

A significant difference exists between IIL and ML with respect to perceived risk of HIV infection – H_1

Finally, the relevance of the I-Change Model was tested to determine which of its constructs of predisposing, awareness, informational and motivational factors and intention predicted sexual abstinence among IIL.

6.3 Conclusions

Both quantitative and qualitative data collection methods revealed that learners with intellectual impairments are sexual like any other human being. However, the labelling of their sexuality as abnormal is a projection of the stigmatisation and marginalisation that this group of individuals have always been subjected to. In addition, they demonstrated lower HIV/AIDS awareness, knowledge, and risk perception than their non-disabled peers. Learners with intellectual disability were also more prone to risky sexual behaviours, sexual abuse, and substance use than mainstream learners. Moreover, they faced more challenges than ML in expressing and realising their sexuality, as well as in accessing relevant sexual health services. All of these factors increase their risk of HIV infection than their non-disabled counterparts. The IIL in this study were so disadvantaged not merely because of their intellectual impairment but rather because their differences were not acknowledged and society at large perceived them as ‘others’ whose needs were not prioritised.

Stigmatisation is the root of all of the observed disadvantages that put IIL at higher risk of HIV infection, as documented in this study: from being labelled as ‘sexually deviant’; to marginalisation in accessing sexuality and HIV/AIDS information and consequently being ignorant about these issues; to parental and institutional neglect; to having sexual expression and

rights curtailed; and to marginalisation in accessing HIV testing, care and treatment. This must be addressed by utilising collaborative approach that include the society at large and that incorporates public awareness and enlightenment about intellectual disabilities, persons with intellectual disabilities and sexuality as part of HIV prevention intervention targetted at individuals with intellectual impairments.

Furthermore, persons with intellectual impairments can learn about sexuality and HIV/AIDS if information is tailored to suit their needs. Despite their cognitive impairment, they have equal rights to sexuality and HIV/AIDS education (UN, 2006) and protection of their lives. Although there is no prevalence data yet in Nigeria to show the rate of HIV infection among this group, as argued by Jacobs et al. (1989), it will be unfair to wait until there is overwhelming evidence of HIV-related infection and deaths in the intellectually disabled population before we take necessary action. Their higher risk of HIV infection than mainstream learners has been established in this study and is convincing enough to prompt timeous action.

Finally, motivational factors and intention predicted sexual abstinence among IIL. Therefore, social influence and training in life skills should be considered as part of HIV prevention and sexuality education that emphasizes sexual abstinence among adolescents with intellectual impairments.

Before outlining the policy implications of the findings of this study, it is necessary to acknowledge the problem of not implementing well-formulated policies in Nigeria, and the SSA in general. This, according to Adjibolosoo (1995), could be traced to a lack of the Human Factor (HF), which he defines as “a spectrum of personality characteristics and other dimensions of human performance that enable social, economic and political institutions to function and remain functional, over time”. He argues that human characteristics such as integrity, responsibility, dedication, diligence, discipline, resilience, trustworthiness, and accountability are pertinent to the process of knowledge acquisition and its application to achieve results. Therefore, these characteristics must be built into education and training programmes for citizens to become productive. Obviously, the current education in Nigeria is geared towards the acquisition of knowledge and skills without the necessary HF qualities to achieve and sustain respect for human dignity, just legal systems, political harmony, social welfare etc. It is this lack of good

leadership and citizenship that makes it difficult for formulated policies to be implemented in Nigeria, hence the country's lack of social, economic and political development.

To this end, I suggest that Nigeria embrace Adjibolosso's recommendations by reviewing her current education and training programmes to identify their specific shortcomings and their root causes (Adjibolosoo, 2006). The country should then develop and implement a human factor-based education and training curriculum to address the identified problems. At all levels of education, primary to tertiary, the aim should be not only to equip citizens with knowledge and skills but also to instil HF qualities into them. If this is adopted, there is hope that the country will begin to witness gradual changes and that formulated policies will be implemented to bring about necessary development.

6.4 Policy implications

In light of the above position and the provisions of Articles 6(1), 10 and 25 of the Convention on the Rights of Persons with Disabilities (CRPD), these will (UN, 2006):

- Recognise that women and girls with disabilities are subject to multiple levels of discrimination, and shall take measures to ensure that they are afforded the full and equal enjoyment of all human rights and fundamental freedoms;
- Reaffirm that every human being has the inherent right to life and shall take all necessary measures to ensure its effective enjoyment by persons with disabilities on an equal basis with others; and
- Provide persons with disabilities with the same range, quality and standard of free or affordable healthcare and programmes provided to other people, including in the area of sexual and reproductive health and population-based programmes.

The researcher advocates that the Nigerian government, civil society, researchers and international agencies take actions to integrate persons with intellectual disability into mainstream life and the HIV response in Nigeria as follows:

6.4.1 The Nigerian government

should:

- Ratify all of the international legal instruments to which it is signatory, including the CRPD, and pass into law a ‘Bill for an Act to establish a National Commission for Handicapped Persons’ and a ‘Bill for an Act to provide for special facilities for handicapped persons in public buildings’ that have been pending at the National Assembly level since 2000;
- Implement the provisions of the 1993 Nigerians with Disability Decree (‘Nigerians with Disability Decree’, 1993) and Section 42 of the Nigerian Constitution as it relates to discrimination against PWD (International Centre for Nigerian Law, 1999-2009);
- Include disability in the National Action Committee on AIDS (NACA) to ensure resource allocation to policy and programme development that is inclusive of PWD;
- Ensure representation of PWD, including PWID, in NACA to infuse disability issues into policy design, implementation and evaluation at all levels;
- Develop age and culture sensitive, tailored sexuality and HIV/AIDS education for persons with diverse types of disability, including intellectual disability, in Nigerian schools;
- Develop programmes and specialised legal support for the prevention of sexual abuse of women and girls with intellectual disability;
- Provide PWID with good, accessible and affordable medical care, including HIV-related testing, treatment, care and support equal to that which is available to the general population;
- Train health workers to respect the rights and dignity of PWID, as well as give them preference in healthcare service delivery;

- Equip hospitals and HIV-related services with relevant facilities and resources to accommodate the various needs of PWID;
- Provide training and support to persons with mild intellectual disability on how to be peer HIV counsellors;
- Design policies to support and respect families so as to foster their inclusion and that of their children with intellectual disability in community life;
- Provide training for parents so that they can contribute to the sexuality and HIV/AIDS prevention education of their children with intellectual disability;
- Train and support teachers of learners with disability on how to provide sexuality and HIV/AIDS prevention education in appropriate formats to learners with diverse kinds of disability, including intellectual disability; and
- Develop policies and programmes that support collaboration between stakeholders – parents, teachers, educational authorities/administrators and the community – involved with learners with intellectual disability.

6.4.2 Civil society/Non-governmental organisations

should:

- Develop and implement inclusion policy, at least. Preferably, they should have disability policy in place. In this way, they are likely to be more committed to disability issues, including intellectual disability. Moreover, they should make use of the UN Convention on the Rights of Persons with Disabilities to advocate the rights of PWID in Nigeria.
- Network with Disables People’s Organisations (DPOs) for guidance on the appropriate strategies to adopt in order to ensure inclusion of PWID in their programmes and services.
- Foster collaborations between HIV/AIDS and DPOs/intellectual disability experts. Such collaborations, for example, are capable of sensitizing HIV/AIDS experts to intellectual disability issues. Apart from that, this kind of networking will better equip them to accommodate the needs of PWID in their programmes and services, thus increasing

access of PWID to HIV prevention, care and support services. Similarly, intellectual disability experts would be afforded the opportunity to know more about HIV/AIDS prevention, care and support and be able to apply these to provide services in accessible formats to PWID

- Advocate for and support PWID's self-advocacy for their sexual and reproductive health rights.
- Provide public enlightenment about stigmatisation and sexual exploitation and abuse of PWID. Civil society has a role in preventing and facilitating access of PWID to sexual abuse-related care and supports. By raising awareness of the society about intellectual disability and PWID civil society can address stigmatisation, as well as sexual exploitation and abuse of PWID. In addition, civil society can work alongside relevant service providers to develop their skills in order to provide accessible services to victims of sexual abuse who are PWID. This is of particular importance with regards to service providers such as the law enforcement agents, courts of law, health workers, and HIV counsellors. To safeguard the health of PWID and ensure that justice is done, service providers need to know how to adequately handle cases of PWID when such are brought to them.
- Ensure the inclusion of persons with mild intellectual disability in the design, implementation and evaluation of HIV programmes at all levels in Nigeria. To ensure inclusion of PWID, a twin-track approach is advocated. This entails mainstreaming the needs of PWID in the general HIV/AIDS programmes and services as much as possible, as well as empowering PWID by providing tailored services. Through this, PWID will have equality of rights and opportunities with non-disabled persons.

6.4.3 Researchers/institutions of higher learning

should:

- Initiate and support disability studies in Nigerian universities;
- Form foreign and local collaborations and networks for advancing the study of intellectual disability in Nigeria;
- Encourage research funding for HIV/AIDS and intellectual disability;
- Sensitise colleagues to add disability, including intellectual disability, factors to their studies;
- Encourage students to research the field of HIV/AIDS and intellectual disability;
- Encourage the inclusion of persons with intellectual disability as research participants;
- Encourage the review of existing literature on disability and HIV/AIDS in Nigeria and West Africa for future research direction; and
- Create opportunities for researchers with disability to enrich disability studies in Nigeria.

6.4.4 Development partners

should:

- Provide funds for research/programmes/services in the field of HIV/AIDS and disability, including intellectual disability in Nigeria;
- Make the inclusion of PWD, including PWID, in HIV policy design, implementation, and evaluation in Nigeria compulsory;
- Encourage the inclusion of PWD as researchers in HIV/AIDS projects in Nigeria; and
- Develop and validate disability-specific indicators for use in NACA programme monitoring and evaluation.

6.5 Guidelines for developing tailored school-based sexuality and HIV/AIDS prevention education for learners with mild/moderate intellectual disability in Nigeria

In addition to the basic attributes of standard sexuality and HIV/AIDS prevention education for adolescents, the following guidelines for the development of interventions for learners with mild/moderate intellectual disability are suggested based on the findings of this study and the existing literature:

- Due to the sensitive nature of sexual issues, participants should be made to feel comfortable discussing issues openly, while educators must assure them that the discussions will remain confidential and must communicate a non-judgemental attitude;
- Simple, clear and concrete language must be used to facilitate understanding and recall;
- Instructional methods must utilise explicit media e.g. pictures, slides, video and interactive instructional strategies like role-play. However, the private nature of sexual intercourse should be reinforced by using a one-to-one approach. Modelling of HIV-positive persons should be used to reinforce the reality of HIV/AIDS;
- Learners must be taught to distinguish between appropriate private and public behaviours;
- Learners' existing sexuality knowledge must be assessed to identify misconceptions, fears, values and concerns;
- Learners must be taught in small groups wherein individuals are at the same intellectual functioning level, but this must be complemented with individual sessions to account for heterogeneity of group members with regard to sexual relationships;
- Asking questions must be encouraged to promote understanding and group interactions;
- Questions should be directed to each member of the group in turn to compensate for the heterogeneity in learning ability among group members;
- Simple information must be provided that is sufficient for individuals to function or achieve the knowledge or skills goals;

- Information must logically be introduced and each topic or theme must build from the previous one;
- Measurable goals and objectives for lessons in the curriculum must be set, with emphasis being on affective domain for those objectives that teach skills;
- Content must include biological and reproductive information, and themes to be addressed must include: private body parts; health and hygiene, including STIs and HIV/AIDS; relationships; self-protection skills (e.g. how to assess, recognise and avoid sexual exploitation and abuse); and skills on how to be assertive, self-efficient and to self-advocate;
- Social aspects of personal and sexual relationships as well as explicit anatomical and/or physical aspects must be taught;
- Closely linking sexual intercourse and disease transmission must be avoided so as to not create a perception that all sexual intercourse leads to disease;
- Prevention against STIs and HIV/AIDS must be reinforced by encouraging abstinence for young learners who are yet to initiate sex and by promoting safe sex for those who are already sexually active;
- Validated instructional methods and materials must be utilised;
- Flexibility is important in accommodating modified instructional methods, materials and methods of evaluating learners' progress;
- Curriculum must be designed to be culture and age sensitive/appropriate;
- Behavioural conceptual frameworks like the I-Change Model must be used;
- Teacher training in sexuality and HIV/AIDS education of learners with intellectual impairment must be provided;
- Parents must be involved at all stages of the programme (i.e. planning, development, implementation and evaluation) to ensure their input, address their misconceptions, fears and concerns, as well as accommodate their values; and
- Collaborations between stakeholders (e.g. parents, teachers, education administrators, the community, adolescents and HIV/AIDS community-based organisations with and without a disability focus, NGOs, interested members of the community etc.) must be encouraged.

6.6 Limitations and strengths of the study

This was a cross-sectional study and it was impossible to establish the cause-and-effect. It also depended on self-reporting sexual activities, which was liable to respondents' bias in that they may have reported socially desirable responses. Furthermore, the study collected data on past sexual experiences which may be subject to recall bias, particularly among learners with intellectual disability. In addition, most of the learners were not able to answer questions about past sexual experiences. Also, the test battery was long and this could have compromised the quality of the data collected particularly for IIL.

Findings from the quantitative data may not be generalised for ML in Oyo State as a whole because only a small proportion of such learners were included in the study. Similarly, the contextual factors resulting from the qualitative data may not be generalised beyond the groups studied. Despite this, patterns/trends emerged that could serve as the basis for comparing HIV knowledge, attitudes and sexual practices among IIL and ML in the state.

Poor collaboration of the Oyo State Ministry of Education and special schools' record-keeping was evident in that there were disparities in the enrolment record supplied by the Ministry and the schools' actual enrolment data. It seemed as though the records were not being regularly updated. In addition, the Oyo State Ministry of Education's reluctance to release the enrolment data pertaining to mainstream learners in its schools on political grounds made it impossible to ascertain the actual number of such learners in Oyo State secondary schools.

The fact that the researcher is a person with disability might have made some of the non-disabled participants tell her what they thought she wanted to hear. For the same reason, participants with disability might have felt very free to share their experiences with her. In addition, her disability made some of the teachers participating assume that she already knew all about special education and what their personal experiences with their learners would be. To encourage them to share their experiences with her, she had to convince them that she was a novice in special education and did not share their experiences in teaching these learners.

Physically accessing the schools was a great problem for the researcher, who is a wheelchair-user. As a result, the researcher had to work with a personal assistant who could handle a wheelchair on rough terrain, and could assist with getting the wheelchair upstairs. Even special schools in Oyo State were not fully equipped for wheelchair-users, and only two of them were partially wheelchair-accessible at the time of the study.

Furthermore, all the head teachers/principals of the schools that participated in the study, particularly special schools, were very glad to receive a researcher with disability, and with disability focus. And a few of the special schools used the opportunity to showcase the researcher as a role model to their learners by asking her to give motivational talks to learners after the research activities.

6.7 Recommendations for future research

This study has provided convincing evidence regarding how learners with mild/moderate intellectual impairment are more vulnerable to HIV infection than the mainstream learners in Nigeria and Africa by directly comparing both groups. It has also suggested guidelines for tailoring sexuality and HIV/AIDS education of IIL. However, it did not develop and/or test the effectiveness of any tailored sexuality and HIV/AIDS prevention intervention for IIL in Nigeria. It is therefore critical for further research to develop and investigate the effectiveness of different approaches to tailored sexuality and HIV/AIDS education for this group of learners in Nigeria and elsewhere in Africa, where no such intervention programmes exist yet. On the other hand, the evaluation of existing tailored sexuality and HIV/AIDS intervention programmes should be undertaken in countries that have implemented such. Furthermore, findings of this study suggest that Nigeria's FLHE curriculum for ML is ineffective in the way it is currently implemented in Oyo State. A systematic evaluation of the effectiveness of this curriculum in Oyo State is needed to provide a basis for its revision.

Although the study provides sufficient evidence that adolescents with intellectual disability are more vulnerable to HIV infection than their non-disabled peers, the prevalence of HIV infection

among persons with intellectual disability in Nigeria is also needed. This becomes crucial in ascertaining the extent to which this population has been affected by the HIV pandemic, and to further inform an appropriate HIV response for this population with intellectual disability. As indicated by the findings of the study and the literature review, HIV infection among persons with intellectual disability in Nigeria is not common knowledge. Determining such could be challenging given the ethical implications of gaining consent to test for HIV among a group of individuals that are considered vulnerable, and the issue of pre- and post-test counselling would need to be carefully assessed. In addition, administering HIV tests to intellectually disabled persons may raise the question of possible repercussions for a group that is already highly stigmatised.

Moreover, the study explored and compared the sexuality of learners with mild/moderate intellectual disability and non-disabled learners in relation to HIV/AIDS in an African context, considering both the learners' perspectives and those of their teachers. However, much remains unknown regarding parents' and the Nigerian society's perspectives on the subject. Future studies are thus needed to elucidate the parents' and communities' perspectives regarding the sexuality of learners, especially regarding those with intellectual disability. This will ensure that the misconceptions, fears and concerns of parents are adequately addressed in intervention programmes focussing on the sexuality and/or sexual health of young people with intellectual disability. Similarly, the community is relevant to the lives of persons with intellectual disability, especially as they express negative attitudes towards these individuals and community members sometimes sexually abuse these individuals. The community has a great role to play in curbing the sexual abuse of women and girls with intellectual disability. To adequately address this issue, we need to hear from them so as to inform interventions targeted at changing their negative attitudes and obliterating myths that may put women and girls with intellectual impairment at higher risk of sexual abuse and exploitation.

Additionally, adolescents with intellectual impairment in this study briefly described their sexual aspirations and dreams. This aspect of their lives needs further exploration. We need to know the depth of their sexual expectations and dreams, and the extent to which it impacts on their lives,

the barriers they face in realising those dreams and expectations, and how they can be helped to achieve fulfilling sexual lives.

Finally, the current study tested the relevance of the I-Change Model in predicting sexual abstinence among intellectually impaired and mainstream learners. Further study is needed to test the relevance of the model in predicting adoption of safe sex, specifically on how adolescents with and without intellectual impairment use condoms. This is necessary to document its strengths and weaknesses versus those of earlier behavioural models, and to determine its appropriateness in various situations.

6.8 Concluding comments

The magnitude of the HIV pandemic in Nigeria can only be appreciated by considering that it is the most populous African country, with about 140 million people. The HIV response therefore has to target all groups if such efforts are to make a significant impact on controlling the spread of the virus in Nigeria. To leave PWD, including PWID, out of the picture could be devastating. PWID's higher vulnerability to HIV infection, which has, until now, been based on speculation from disaggregated findings among this group of individuals and the non-disabled in Africa, has been confirmed by the findings from this direct comparative study between the two groups in Nigeria. To this end, a response is required from all stakeholders to protect the health and lives of persons with intellectual disability in Nigeria, and on the African continent.

REFERENCES

- AAIDD. (2009). Definition of intellectual disability. Retrieved 19 October, 2009, from http://www.aamr.org/content_100.cfm?navID=21
- Abang, T.B. (1988). Disablement, disability and the Nigerian society. *Disability, Handicap & Society*, 3(1), 71-78.
- Abasiubong, F., Obembe, A., & Ekpo, M. (2008). The opinions and attitudes of mothers to mental retardation in Lagos, Nigeria. *Nigerian Journal of Psychiatry*, 6(2), 80-85.
- Abdool Karim, Q. (2001). Barriers to preventing human immunodeficiency virus in women: experiences from KwaZulu-Natal, South Africa. *Journal of the American Medical Women's Association*, 56(4), 193-196.
- Abdulraheem, I.S., & Fawole, O.I. (2009). Young people's sexual risk behaviors in Nigeria. *Journal of Adolescent Research*, 24(4), 505-527.
- Adebayo, D.O., Udegbe, I.B., & Sunmola, A.M. (2006). Gender, internet use, and sexual behavior orientation among young Nigerians. *Cyberpsychology & Behavior*, 9(6), 742-752.
- Adebiyi, A.O., Owoaje, O., & Asuzu, M.C. (2008). Relationships as determinants of substance use amongst street children in a local government area in south-western Nigeria. *South African Family Practice*, 50(5), 47-47d.
- Ademokoya, J.A., & Ben-Stowe, J.N. (2007). Experiences of mothers of children with hearing disability in Oyo State, Nigeria. *The Social Sciences*, 20(3), 293-297.
- Adinma, J.I.B., Agbai, A.O., Okeke, A.O., & Okaro, J.M. (1999). Contraception in teenage Nigerian school girls. *Advances in Contraception*, 15(4), 283-291.
- Adjibolosoo, S.B-S.K. (1995). *The human factor in developing Africa*. Westport, CT: Praeger Publishers.
- Adjibolosoo, S.B-S.K. (2006). *Developing civil society: social order and the human factor*. Hampshire . Burlington: Ashgate Publishing Limited.
- Aggleton, P., Chase, E., Rivers, K., & Tyrer, P. (2000). *Innovative approaches to HIV prevention: selected case studies*. Geneva: UNAIDS.
- Agius, P.A., Dyson, S., Pitts, M.K., Mitchell, A., & Smith, A.M. (2006). Two steps forward and one step back? Australian secondary students' sexual health knowledge and behaviors 1992-2002. *Journal of Adolescent Health*, 38(3), 247-252.
- Aina, O.F., & Olorunshola, D.A. (2007-2008). Alcohol and substance use portrayals in Nigerian video tapes: an analysis of 479 films and implications for public drug education. *International Quarterly of Community Health Education*, 28(1), 63-71.
- Ajibola, P.O., Yussuf, A.D., Issa, B.A., & Parakoyi, M.A. (2008). A five-year retrospective study of inpatient adolescents and young adults with psychiatric disorders in a Nigerian Teaching Hospital. *Nigerian Journal of Psychiatry*, 6(2), 60-64.
- Ajuwon, A.J., Olaleye, A., Faromoku, B., & Ladipo, O. (2006). Sexual behavior and experience of sexual coercion among secondary school students in three states in North Eastern Nigeria [Electronic Version]. *BMC Public Health*, 6. Retrieved 8 March, 2008, from <http://www.biomedcentral.com/1471-2458/6/310>.
- Aldridge, J. (2007). Picture this: the use of participatory photographic research methods with people with learning disabilities. *Disability & Society*, 22(1), 1-17.

- Ali, S.K. (2009). Cardiac abnormalities of Sudanese patients with Down's syndrome and their short-term outcome. *Cardiovascular Journal of Africa*, 20(2), 112-115.
- Ames, T.H. (1991). Guidelines for providing sexuality-related services to severely and profoundly retarded individuals: the challenge for the nineteen-nineties. *Sexuality and Disability*, 9(2), 113-122.
- Amoateng, A.Y., Kalule-Sabiti, I., & Narayanan, P. (2007). Substance use and sexual behaviour among African adolescents in the North West province of South Africa. *African Journal of Drug and Alcohol Studies*, 6(1), 27-38.
- Anderson, D.J., Lakin, K.C., Hill, B.K., & Chen, T.H. (1992). Social integration of older persons with mental retardation in residential facilities. *American Journal of Mental Retardation*, 96(5), 488-501.
- Anderson, P., & Kitchin, R. (2000). Disability, space and sexuality: access to family planning services. *Social Science and Medicine*, 51(8), 1163-1173.
- APA. (2000). *Diagnostic and Statistical Manual of Mental Disorders-Text Revision* (4th ed.). Washington, D. C.: American Psychiatric Association.
- Aunos, M., & Feldman, M.A. (2002). Attitudes towards sexuality, sterilization and parenting rights of persons with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 15(4), 285-296.
- Babalola, S., Tambahe, B.O., & Vondrasek, C. (2005). Parental factors and sexual risk-taking among people in Côte d'Ivoire. *African Journal of Reproductive Health*, 9(1), 49-65.
- Bachanas, P.J., Morris, M.K., Lewis-Gess, J.K., Sarett-Cuasay, E.J., Sirl, K., Ries, J.K., et al. (2002). Predictors of risky sexual behavior in African American adolescent girls: implications for prevention interventions. *Journal of Pediatric Psychology*, 27(6), 519-530.
- Bachman, S.S., Drainoni, M-L., & Tobias, C. (2004). Medicaid managed care, substance abuse treatment, and people with disabilities: review of the literature. *Health & Social Work*, 29(3), 189-196.
- Bakare, M.O., Ubochi, V.N., Okoroikpa, I.N., Aguocha, C.M., & Ebigbo, P.O. (2009). Agreement between clinicians' and care givers' assessment of intelligence in Nigerian children with intellectual disability: 'ratio IQ' as a viable option in the absence of standardized 'deviance IQ' tests in sub-Saharan Africa [Electronic Version]. *Behavioral and Brain Functions*, 5. Retrieved 29 November, 2009, from <http://www.behavioralandbrainfunctions.com/content/pdf/1744-9081-5-39.pdf>.
- Bandura, A. (1992). A social cognitive approach to the effectiveness of control over AIDS infection. In R. J. DiClemente (Ed.), *Adolescents and AIDS: a generation in jeopardy* (pp. 89-116). Newbury Park.London.New Delhi: SAGE Publications.
- Bardon, J.N., & Corbin, S.B. (2006). *Attitudes of the public in South Africa toward people with intellectual disabilities*. Washington, D. C.: Special Olympics.
- Barnes, C., & Mercer, G. (2003). *Disability* (1st ed.). Cambridge: Polity Press.
- Bazzo, G., Nota, L., Soresi, S., Ferrari, L., & Minnes, P. (2007). Attitudes of social service providers towards the sexuality of individuals with intellectual disability. *Journal of Applied Research in Intellectual Disabilities*, 20(2), 110-115.
- Bearman, P., & Brückner, H. (1999). *Power in numbers: peer effects on adolescent girls' sexual debut and pregnancy*. Washington, D.C.: National Campaign to Prevent Teen Pregnancy.

- Beart, S., Hardy, G., & Buchan, L. (2005). How people with intellectual disabilities view their social identity: a review of the literature. *Journal of Applied Research in Intellectual Disabilities, 18*(1), 47-56.
- Behets, F.M., Williams, Y., Brathwaite, A., Hylton-Kong, T., Hoffman, I., Dallabetta, G., et al. (1995). Management of vaginal discharge in women treated at a Jamaican sexually transmitted diseases clinic: use of diagnostic algorithms versus laboratory testing. *Clinical Infectious Diseases, 21*(6), 1450-1455.
- Bersamin, M.M., Walker, S., Waiters, E.D., Fisher, D.A., & Grube, J.W. (2005). Promising to wait: virginity pledges and adolescent sexual behavior. *Journal of Adolescent Health, 36*(5), 428-436.
- Billy, J.O.G., & Udry, J.R. (1983). *The effects of age and pubertal development on adolescent sexual behavior*. Unpublished manuscript.
- Birch, D.A., Angermeier, L.K., & Gentsch, D.K. (2002). HIV prevention education for students with mental retardation. *Rural Special Education Quarterly, 21*(3), 15-20.
- Blanchett, W.J. (2000). Sexual risk behaviors of young adults with LD and the need for HIV/AIDS education. *Remedial and Special Education, 21*(6), 336-345.
- Blanchett, W.J., & Wolfe, P.S. (2002). A review of sexuality education curricula: meeting the sexuality education needs of individuals with moderate and severe intellectual disabilities. *Research & Practice for Persons with Severe Disabilities, 27*(1), 43-57.
- Blum, R.W., Kelly, A., & Ireland, M. (2001). Health-risk behaviors and protective factors among adolescents with mobility impairments and learning and emotional disabilities. *Journal of Adolescent Health, 28*(6), 481-490.
- Boomie, O. (1998-2002). Motherland Nigeria: geography - map Retrieved 8 April, 2010, from <http://www.motherlandnigeria.com/geography.html>
- Booth, T. (1996). Sounds of still voices: issues in the use of narrative methods with people who have learning difficulties. In L. Barton (Ed.), *Disability and society: emerging issues and insights*, Sociology Series. New York: Longman.
- Boreham, R., & Shaw, A. (2002). *Drug use, smoking and drinking among young people in England in 2001*. London: ONS.
- Borofice, R.A. (1978). Down's syndrome in Nigeria: dermatoglyphic analysis of 50 cases. *Nigerian Medical Journal, 8*(6), 571-576.
- Borofice, R.A. (1981). Learning and development in children with Down's syndrome anomaly. *Ilorin Journal of Education, 1*, 25-34.
- Bower, B.P., & Wingood, G.M. (1992). Community-based HIV-prevention programs for adolescents. In R. J. DiClemente (Ed.), *Adolescents and AIDS: a generation in jeopardy*. Newbury Park.London.New Delhi: SAGE Publications.
- Brabin, L. (2004). *Sexually transmitted infections: issues in adolescent health and development*. Geneva: World Health Organization.
- Brabin, L., Kemp, J., Obunge, O.K., Ikimalo, J., Dollimore, N., Odu, N.N., et al. (1995). Reproductive tract infections and abortion among adolescent girls in rural Nigeria. *The Lancet, 345*(8945), 300-304.
- Bralock, A.R., & Koniak-Griffin, D. (2007). Relationship, power, and other influences on self-protective sexual behaviors of African American female adolescents. *Health Care for Women International, 28*(3), 247-267.

- Bramston, P., & Spence, S.H. (1985). Behavioural versus cognitive social-skills training with intellectually-handicapped adults. *Behaviour Research and Therapy*, 23(3), 239-246.
- Brantlinger, E. (1985). Mildly mentally retarded secondary school students' information about and attitudes towards sexuality and sex education. *Education and Training of the Mentally Retarded*, 19(2), 99-108.
- Breslin, M.L. (2002). Introduction. In M. L. Breslin & S. Yee (Eds.), *Disability rights law and policy: international and national perspectives* (pp. xxi-xxx). Ardsley: Transnational Publishers, Inc.
- Brocato, V. (2005). *Establishing national guidelines for comprehensive sexuality education: lessons and inspiration from Nigeria*. New York: Sexuality Information and Education Council of the United States (SIECUS).
- Brook, D.W., Morojele, N.K., Zhang, C., & Brook, J.S. (2006). South African adolescents: pathways to risky sexual behavior. *AIDS Education and Prevention*, 18(3), 259-272.
- Brook, J.S., Morojele, N.K., Pahl, K., & Brook, D.W. (2006). Predictors of drug use among South African adolescents. *Journal of Adolescent Health*, 38(1), 26-34.
- Brown, E.J., & Jemmott, L.S. (2002). HIV prevention among people with developmental disabilities. *Journal of Psychosocial Nursing & Mental Health Services*, 40(11), 14-21.
- Brown, L.K., Danovsky, M.B., Lourie, K.J., DiClemente, R.J., & Ponton, L.E. (1997). Adolescents with psychiatric disorders and the risk of HIV. *Journal of American Academy of Child Adolescence Psychiatry*, 36(11), 1609-1617.
- Bruininks, R., Hill, B.K., & Morreau, L.E. (1988). Prevalence and implications of maladaptive behaviours and dual diagnosis in residential and other service programs. In J. A. Stark, F. J. Menolascine, M. H. Albarelli & V. C. Gray (Eds.), *Mental retardation and mental health: classification, diagnosis, treatment, services* (pp. 3-29). New York: Springer-Verlag.
- Bryman, A. (1989). *Research methods and organization studies*. London: Unwin Hyman.
- Burstein, G.R., Waterfield, G., Joffe, A., Zenilman, J.M., Quinn, T.C., & Gaydos, C.A. (1998). Screening for gonorrhoea and chlamydia by DNA amplification in adolescent attending middle school health centers. *Sexually Transmitted Diseases*, 25(8), 395-402.
- Campsmith, M.L., Goldbaum, G.M., Brackbill, R.M., Tollestrup, K., Wood, R.W., & Weybright, J.E. (1997). HIV testing among men who have sex with men: results of a telephone survey. *Preventive Medicine*, 26(6), 839-844.
- Canadian Paediatric Society. (2003). Age limits and adolescents. *Paediatrics & Child Health*, 8(9), 577.
- Cates, W., & McPheeters. (1997). *Adolescents and sexually transmitted diseases: current risks and future consequences*. Paper presented at the Adolescent sexuality and reproductive health in developing countries: trend and interventions.
- Chen, R.K., Brodwin, M.G., Cardoso, E., & Chan, F. (2002). Attitudes toward people with disabilities in the social context of dating and marriage: a comparison of American, Taiwanese, and Singaporean college students. *Journal of Rehabilitation*, 68(4), 5-11.
- Cheng, M.M., & Udry, J.R. (2002). Sexual behaviors of physically disabled adolescents in the United States. *Journal of Adolescent Health*, 31(1), 48-58.
- Cheng, T.L., Savageau, J.A., Sattler, A.L., & DeWitt, T.G. (1993). Confidentiality in health care: a survey of knowledge, perceptions and attitudes among high school students. *Journal of the American Medical Association*, 269(11), 1404-1407.

- Chilman, C. (1980). "Toward a reconceptualization of adolescent sexuality" In C. Chilman (Ed.), *Adolescent pregnancy and childbearing: findings from research* (pp. 101-127). Washington, D.C.: U.S. Department of Health and Human Services.
- Choquet, M., Du Pasquier Fediaevsky, L., & Manfredi, R. (1997). Sexual behaviors among adolescents reporting chronic conditions: a French national study. *Journal of Adolescent Health, 20*(1), 62-67.
- Choruma, T. (2007). *The forgotten tribe: people with disabilities in Zimbabwe*. Retrieved 15 September, 2007, from http://www.ciir.org/progressio/s/basket/93639/the_forgotten_tribe_people_with_disabilities_in_z/.
- Christian, L., Stinson, J., & Dotson, L.A. (2001). Staff values regarding the sexual expression of women with disabilities. *Sexuality and Disability, 19*(4), 283-291.
- Christianson, A.L., Zwane, M.E., Manga, P., Rosen, E., Venter, A., Downs, D., et al. (2002). Children with intellectual disability in rural South Africa: prevalence and associated disability. *Journal of Intellectual Disability Research, 46*(2), 179-186.
- Clark, L.I., & O'toole, M.S. (2007). Intellectual impairment and sexual health: information needs. *British Journal of Nursing, 16*(3), 154-156.
- Cohen, B., & Trussell, J. (Eds.). (1996). *Preventing and mitigating AIDS in sub-Saharan Africa: research and data priorities for the social and behavioral sciences*. Washington, D.C.: National Academy Press.
- Conger, J. (1973). *Adolescence and youth*. New York: Harper and Row.
- Connidis, I. (1983). Integrating qualitative and quantitative methods in survey research on ageing: an assessment. *Qualitative Sociology, 6*(4), 334-352.
- Council of Economic Advisors. (2000). *Teens and their parents in the 21st Century: an examination of trends in teen behavior and the role of parental involvement*. Washington, D.C.: The White House.
- CPS. (2009). New monthly data series on the employment status of people with a disability (Publication. Retrieved 12 November, 2009, from Current Population Survey: http://www.bls.gov/cps/cpsdisability_102009.pdf).
- Craft, A., & Craft, M. (1979). *Handicapped married couples*. London: Routledge and Kegan Paul.
- Craft, A., & Craft, M. (1983). *Sex education and counseling for mentally handicapped people*. Tunbridge Wells: Costello.
- D'Agostino, R.B., Chase, W., & Belanger, A. (1988). The appropriateness of some common procedures for testing equality of two independent binomial populations. *The American Statistician, 42*(3), 198-202.
- Dada, O. (2007). Intellectually retarded education in Nigeria: past, present, and future. *Essays in Education, 22*, 75-77.
- Dawood, N., Bhagwanjee, A., Govender, k., & Chohan, E. (2006). Knowledge, attitudes and sexual practices of adolescents with mild retardation, in relation HIV/AIDS. *African Journal of AIDS Research, 5*(1), 1-10.
- de Schamphelleire, I. (1997). Review of literature and other research to determine the validation of the syndromic approach in the management of sexually transmitted diseases in women and adolescents. Unpublished First Draft, Part II. WHO, ADH and UNAIDS.

- de Vries, H., Mudde, A., Leijds, I., Charlton, A., Vartiainen, E., Buijs, G., et al. (2003). The European Smoking prevention Framework Approach (EFSA): an example of integral prevention. *Health Education Research*, 18(5), 611-626.
- Dehne, K.L., & Riedner, G. (2005). *Sexually transmitted infections among adolescents: the need for adequate health services*. Geneva/Eschborn: World Health Organization/GTZ.
- Di Giulio, G. (2003). Sexuality and people living with physical or developmental disabilities: a review of key issues. *The Canadian Journal of Human Sexuality*, 12(1), 53-68.
- Dickman, B.J., & Roux, A.J. (2005). Complainants with learning disabilities in sexual abuse cases: a 10 year review of a psycho-legal project in Cape Town, South Africa. *British Journal of Learning Disabilities*, 33(3), 138-144.
- Dickman, B.J., Roux, A.J., Manson, S., Douglas, G., & Shabalala, N. (2006). 'How could she possibly manage in court?' An intervention programme assisting complainants with intellectual disabilities in sexual assault cases in the Western Cape. In B. Watermeyer, L. Swartz, T. Lorenzo, M. Schneider & M. Priestley (Eds.), *Disability and social change: a South African agenda* (pp. 116-133). Cape Town: HSRC Press.
- DiClemente, R.J. (Ed.). (1992). *Adolescents and AIDS: a generation in jeopardy*. Newbury Park, London, New Delhi: SAGE Publications.
- DiClemente, R.J., Wingood, G.M., Crosby, R., Sionean, C., Cobb, B.K., Harrington, K., et al. (2001). Parental monitoring: association with adolescents' risk behaviors. *Pediatrics*, 107(6), 1363-1368.
- Di Giulio, G. (2003). Sexuality and people living with physical or developmental disabilities: a review of key issues. *The Canadian Journal of Human Sexuality*, 12(1), 53-68.
- Dilorio, C., Dudley, W.N., Soet, J.E., & McCarty, F. (2004). Sexual possibility situations and sexual behaviors among young adolescents: the moderating role of protective factors. *Journal of Adolescent Health*, 35(6), 528, e511-520.
- Dilorio, C., McCarty, F., Resnicow, K., Lehr, S., & Denzmore, P. (2007). Real men: a group-randomized trial of an HIV prevention intervention for adolescent boys. *American Journal of Public Health*, 97(6), 1084.
- Dilorio, C., Resnicow, K., McCarty, F., De, A.K., Dudley, W.N., Wang, D.T., et al. (2006). Keepin' it R.E.A.L.!: results of a mother-adolescent HIV prevention program. *Nursing Research*, 55(1), 43-51.
- Dittus, P.J., & Jaccard, J. (2000). Adolescents' perception of maternal disapproval of sex: relationship to sexual outcomes. *Journal of Adolescent Health*, 26(4), 268-278.
- Doll, E.A. (1965). *Vineland Social Maturity Scale*. Minnesota: American Guidance Service, Inc
- Donenberg, G.R., Bryant, F.B., Emerson, E., Wilson, H.W., & Pasch, K.E. (2003). Tracing the roots of early sexual debut among adolescents in psychiatric care. *Journal of American Academy of Child and Adolescent Psychiatry*, 42(5), 594-608.
- Dorner, S. (1977). Sexual interest and activity in adolescents with spina bifida. *Journal of Child Psychology and Psychiatry*, 18(3), 229-237.
- DREDF. (2000). Country laws index. Retrieved 13 October, 2009, from <http://www.dredf.org/international/lawindex.shtml>
- Duke, J.E.A. (2006). *Sexual violence against people with developmental disabilities*. Retrieved 2nd April 2008, from <http://www.oregonsatf.org/prevention/docs/DD%20Literature%20Summary.pdf>.

- Duncan, S.C., Strycker, L.A., & Duncan, T.E. (1999). Exploring associations in developmental trends of adolescent substance use and risky sexual behaviour in a high-risk population. *Journal of Behavioural Medicine*, 22(1), 21-24.
- Durkin, M. (2002). The epidemiology of developmental disabilities in low-income countries. *Mental Retardation and Developmental Disabilities*, 8(3), 206-211.
- Durlak, J.A., Fuhrman, T., & Lampman, C. (1991). Effectiveness of cognitive-behavior therapy for maladapting children: a meta-analysis. *Psychological Bulletin*, 110(2), 204-214.
- Eaton, D.K., Kann, L., Kinchen, S., Ross, J., Hawkins, J., Harris, W.A., et al. (2006). Youth risk behavior surveillance-United States, 2005. *Morbidity and Mortality Weekly Report Surveillance Summary*, 55(5), 1-108.
- Ebeigbe, J.A., & Akpalaba, R. (2006). Ocular health status of subjects with Down's syndrome in Benin City, Nigeria. *African Journal of Medical Science*, 35(3), 365-368.
- Edeh, O.M., & Hickson, L. (2002). Cross cultural comparison of interpersonal problem-solving in students with mental retardation. *American Journal of Mental Retardation*, 107(1), 6-15.
- Edwards, J.P., & Elkins, T.E. (1988). *Just between us: a social sexual guide for parents and professionals with concerns for persons with developmental disabilities*. Portland: Ednick Communications.
- Egbochuku, E.O., & Ekanem, I.B. (2008). Attitude of Nigerian secondary school adolescents toward sexual practices: implications for counselling practices. *European Journal of Scientific Research*, 22(2), 177-183.
- Ekanem, T.B., Okon, D.E., Akpantah, A.O., Mesembe, O.E., Eluwa, M.A., & Ekong, M.B. (2008). Prevalence of congenital malformations in Cross River and Akwa Ibom states of Nigeria from 1980-2003. *Congenital Anomalies*, 48(4), 167-170.
- Ellaithi, M., Gisselsson, D., Nilsson, T., Elagib, A., Fadl-Elmula, I., & Abdelgadir, M. (2007). A case of Cornelia de Lange syndrome from Sudan [Electronic Version]. *BMC Pediatrics*, 7. Retrieved 26 October, 2009, from <http://www.biomedcentral.com/1471-2431/7/6>.
- Elwan, A. (1999). Poverty and disability: a survey of the literature, *Social Protection Discussion Paper Series*. Washington, D. C.: Social Protection Unit, Human Development Network, The World Bank.
- Emerson, E., Fujifura, G.T., & Hatton, C. (2007). International perspectives In S. L. Odom, R. H. Horner, M. E. Snell & J. Blacher (Eds.), *Handbook of developmental disabilities* (pp. 593-613). New York . London: The Guilford Press.
- Enwereji, E.E., & Enwereji, K.O. (2008). Disabled persons and HIV/AIDS prevention: a case study of deaf and leprosy persons in Nigeria. *East African Journal of Public Health Association*, 5(2), 55-61.
- Etuk, S.J., Ihejeamaizu, E.C., & Etuk, I.S. (2004). Female adolescent sexual behaviour in Calabar, Nigeria. *The Nigerian Postgraduate Medical Journal*, 11(4), 269-273.
- Fatusi, A.O., & Blum, R.W. (2008). Predictors of early sexual initiation among a nationally representative sample of Nigerian adolescents [Electronic Version]. *BMC Public Health*, 8. Retrieved 4 November, 2009, from <http://www.biomedcentral.com/1471-2458/8/136>.
- Fawole, I.O., Asuzu, M.C., Oduntan, S.O., & Brieger, W.R. (1999). A school-based AIDS education programme for secondary school students in Nigeria: a review of effectiveness. *Health Education Research*, 14(5), 675-683.

- Fawole, O.I., Asuzu, M.C., & Oduntan, S.O. (1999). Survey of knowledge, attitudes and sexual practices relating to HIV infection/AIDS among Nigerian secondary school students. *African Journal of Reproductive Health*, 3(2), 15-24.
- Federal Ministry of Health Nigeria. (2006). *2005 National HIV/syphilis seroprevalence sentinel survey among pregnant women attending antenatal clinics: Technical Report*. Abuja: Federal Ministry of Health Nigeria.
- Feltey, K.M., Ainslie, J.J., & Geib, A. (1991). Sexual coercion attitudes among high school students: the influence of gender and rape education. *Youth and Society*, 23(2), 229-250.
- Ferguson, M. (1998). Teaching skills and the school nurse. In A.S. Garden (Ed.), *Paediatric and Adolescent Gynaecology* (pp. 320-333). UK: A Hodder Arnold Publication.
- Finger, W.R. (2000). Sex education helps prepare young adults. *Network*, 20(3), 1.
- Finkelstein, V. (1980). *Attitudes and disabled people*. New York: World Rehabilitation Fund.
- Fleiss, J.L., Levin, B., & Paik, M.C. (2003). *Statistical methods for rates and proportions* (Third ed.). New York: John Wiley & Sons.
- Flisher, A.J., Parry, C.D.H., Muller, M., & Lombard, C. (2002). Stages of substance use among adolescents in Cape Town, South Africa. *Journal of Substance Use*, 7(3), 162-167.
- Flowers, P., Smith, J.A., Sheeran, P., & Beail, N. (1998). 'Coming out' and sexual debut: understanding the social context of HIV risk-related behaviour. *Journal of Community & Applied Social Psychology*, 8(6), 409-421.
- Flynn, M.C. (1986). Adults who are mentally handicapped as consumers: issues and guidelines for interviewing. *Journal of Mental Deficiency Research*, 30, 369-377
- Fotheringham, J.B. (1999). Living arrangement requirements for individuals with developmental disability and behavioural problems. *Canadian Journal of Psychiatry*, 44(6), 589-591.
- Fremstad, S. (2009). *Half in ten: why taking disability into account is essential to reducing income poverty and expanding economic inclusion*. Washington D. C.: Center for Economic and Policy Research.
- Fujifura, G.T., Park, H.J., & Rutkowski-Kmitta, V. (2005). Disability statistics in the developing world: a reflection on the meanings in our numbers. *Journal of Applied Research in Intellectual Disabilities*, 18(4), 295-304.
- Fujifura, G.T., Rutkowski-Kmitta, V., Owens, R., Corbin, S., & Mersereau, D. (n.d.). *Status and prospects - an international review of the state of intellectual disability surveillance for Nigeria*. Washington, D. C.: Special Olympics.
- Gabre, P., Martinsson, T., & Gahnberg, L. (2001). Longitudinal study of dental caries, tooth mortality and interproximal bone loss in adults with intellectual disability. *European Journal of Oral Sciences*, 109(1), 20-26.
- Ganczak, M., Barss, P., Alfaresi, F., Almazrouei, S., Muraddad, A., & Al-Maskari, F. (2007). Break the silence: HIV/AIDS knowledge, attitudes, and educational needs among Arab university students in United Arab Emirates. *Journal of Adolescent Health*, 40(6), 572 e571-578.
- Giarelli, E., Clarke, D.L., Catching, C., & Ratcliffe, S.J. (2009). Developmental disabilities and behavioural problems among school children in Western Cape of South Africa. *Research in Developmental Disabilities*, 30(6), 1297-1305.
- Gilbert, I. (2007). *The knowledge of HIV/AIDS and the sexual attitudes and behaviours of adolescents with learning difficulties/disabilities*. University of KwaZulu-Natal, Durban.

- Glassman, P., & Miller, C. (2003). Dental disease prevention and people with special needs. *Journal of California Dental Association, 31*(2), 149-160.
- Grassi, L., Pavanati, M., Cardelli, R., Ferri, S., & Peron, L. (1999). HIV-risk behaviour and knowledge about HIV/AIDS among patients with schizophrenia. *Psychological Medicine, 29*(1), 171-179.
- Groce, N.E. (1999). *An overview of young people living with disabilities: their needs and their rights*. New York: UNICEF Inter-Divisional Working Group on Young People
- Groce, N.E. (2003). HIV/AIDS and people with disabilities. *The Lancet, 361*(9367), 1401-1402.
- Groce, N.E. (2004a). Adolescents and youth with disability: issues and challenges. *Asia Pacific Disability Rehabilitation Journal, 15*(2), 13-32.
- Groce, N.E. (2004b). *HIV/AIDS & disability: capturing hidden voices*. Retrieved 21 August, 2007, from <http://siteresources.worldbank.org/DISABILITY/Resources/Health-and-Wellness/HIVAIDS.pdf>.
- Groce, N.E., & Trasi, R. (2004). Rape of individuals with disability: AIDS and the folk belief of virgin cleansing. *The Lancet, 363*(9422), 1663-1664.
- Groce, N.E., Trasi, R., & Yousafzai, A.K. (2006). *Guidelines for inclusion of individuals with disability in HIV/AIDS outreach efforts*. New Haven: Yale University.
- Groce, N.E., Yousafzai, A., Dlamini, P., Zalud, S., & Wirz, S. (2006). HIV/AIDS and disability: a pilot survey of HIV/AIDS knowledge among a deaf population in Swaziland. *International Journal of Rehabilitation Research, 29*(4), 319-324.
- Groce, N.E., Yousafzai, A.K., & van der Maas, F. (2007). HIV/AIDS and disability: differences in HIV/AIDS knowledge between deaf and hearing people in Nigeria. *Disability and Rehabilitation, 29*(5), 367-371.
- Guo, J., Chung, I.J., Hill, K.G., Hawkins, J.D., Catalano, R.F., & Abott, R.D. (2002). Developmental relationships between adolescent substance use and risky sexual behaviour in young adulthood. *Journal of Adolescent Health, 31*(4), 354-362.
- Halloran, D.R., McClure, E., Chakraborty, H., Chomba, E., Wright, L.L., & Carlo, W.A. (2009). Birth asphyxia survivors in a developing country. *Journal of Perinatology, 29*(3), 243-249.
- Hanass-Hancock, J. (2008). *Invisible - the notion of disability in the context of HIV/AIDS in KwaZulu-Natal, South Africa*. Humboldt University of Berlin, Berlin.
- Hanass-Hancock, J. (2009a). Disability and HIV/AIDS – a systematic review of literature on Africa [Electronic Version]. *Journal of the International AIDS Society, 12*. Retrieved 4 May, 2010, from <http://www.jiasociety.org/content/12/1/34>.
- Hanass-Hancock, J. (2009b). Interweaving conceptualizations of gender and disability in the context of vulnerability to HIV/AIDS in KwaZulu-Natal, South Africa. *Sexuality and Disability, 27*(1), 35-47.
- Harris, J.C. (2006). *Intellectual disability*. New York: Oxford University Press, Inc.
- Hassouneh-Phillips, D., & McNeff, E. (2005). "I thought I was less worthy": low sexual and body esteem and increased vulnerability to intimate partner abuse in women with physical disabilities. *Sexuality and Disability, 23*(4), 227-240.
- Hatton, C. (2002). Psychosocial interventions for adults with intellectual disabilities and mental health problems. *Journal of Mental Health, 11*(4), 357-373.

- Hayes, C.D. (Ed.). (1987). *Risking the future: adolescent sexuality, pregnancy, and childbearing*. Washington D.C.: National Academies Press.
- Health and Disability Working Group. (2002). *HIV/AIDS and people with disabilities in Massachusetts: a needs and resource assessment*. Boston: Boston University School of Public Health.
- Helander, E. (1998). *Prejudice and dignity: an introduction to community-based rehabilitation* (2nd ed.). New York: UNDP.
- Heyman, B., & Huckle, S. (1995). Sexuality as a perceived hazard in the lives of adults with learning difficulties. *Disability and Society*, 10(2), 139-155.
- Hingsburger, D. (1990). *I contact: sexuality and people with developmental disabilities*. Mountville: Vida Publishing.
- Hingsburger, D., & Tough, S. (2002). Healthy sexuality: attitudes, systems, and policies. *Research & Practice for Persons with Severe Disabilities*, 27(1), 8-17.
- Hogan, D.P., & Kitagawa, E.M. (1985). The impact of social status, family structure, and neighborhood on the fertility of black adolescents. *The American Journal of Sociology*, 90(4), 825-855.
- Holder, D.W., Durant, R.H., Harris, T.L., Daniel, J.H., Obeidallah, D., & Goodman, E. (2000). The association between adolescent spirituality and voluntary sexual activity. *Journal of Adolescent Health*, 26(4), 295-302.
- Holtzman, N. (2003). Expanding newborn screening: how good is the evidence? *The Journal of the American Medical Association*, 290(19), 2606-2608.
- Howland, C.A., & Rintala, D.H. (2001). Dating behaviors of women with physical disabilities. *Sexuality and Disability*, 19(1), 41-70.
- Huebner, A.J., & Howell, L.W. (2003). Examining the relationship between adolescent sexual risk-taking and perceptions of monitoring, communication, and parenting stules. *Journal of Adolescent Health*, 33(2), 71-78.
- Huntley, C.F., & Benner, S.M. (1993). Reducing barriers to sex education for adults with mental retardation. *Mental Retardation*, 31(4), 215-236.
- Huver, R.M.E., Engels, R.C.M.E., & de Vries, H. (2006). Are anti-smoking parenting practices related to adolescent smoking cognitions and behavior? *Health Education Research*, 21(1), 66-77.
- Ibekwe, R.C., Ojinnaka, N.C., & Iloeje, S.O. (2007). Factors influencing the academic performance of school children with epilepsy. *Journal of Tropical Pediatrics* 53(5), 338-343.
- Iloeje, S.O. (1989). The pattern of childhood epilepsy with mental retardation in Nigeria. *Journal of Tropical Pediatrics*, 35(4), 163-168.
- International Centre for Nigerian Law. (1999-2009). *Constitution of the Federal Republic of Nigeria 1999*. Retrieved 21 August, 2009, from <http://www.scribd.com/doc/8593163/1999-Constitution-of-the-Federal-Republic-of-Nigeria?autodownload=pdf>.
- Isa, S. (2007, December 16). Nigeria: FG includes Family Life/HIV/AIDS Education in the curriculum. *Daily Trust*, p. 2.
- Izuora, G.I. (1985). Aetiology of mental retardation in Nigerian children around Enugu. *Central African Journal of Medicine*, 31(1), 13-16.

- Jacobs, R., Samowitz, P., Levy, J.M., & Levy, P.H. (1989). Developing an AIDS prevention education program for persons with developmental disabilities. *Mental Retardation*, 27(4), 233-237.
- James, A., Ekwempu, A., Aigbokhae, I., Ukatu, N., & Ujah, J. (2006). Sexual behavioral pattern among students in Jos, Nigeria. *Retrovirology*, 3(Suppl 1), P31.
- Jersild, A.T., Brook, J.S., & Brook, D.W. (1978). *The psychology of adolescence* (Third ed.). New York: Macmillan.
- Jessor, R. (1993). Successful adolescent development among youth in high-risk settings. *American Psychologist*, 48(2), 117-126.
- Johns, R. (2007). *All about me – a lifeskills, sexuality and HIV/AIDS education programmes for learners with intellectual disability: a facilitator's manual*. Cape Town: Western Cape Forum for Intellectual Disability.
- Jonsson, T., & Wiman, R. (2001). *Education, poverty and disability in developing countries*. Washington, D. C.: World Bank.
- Kaaya, S.F., Flisher, A.J., Mbwambo, J.K., Schaalma, H., Aarø, L.E., & Klepp, K.-I. (2002). Review article: a review of studies of sexual behaviour of school students in sub-Saharan Africa. *Scandinavian Journal of Public Health*, 30(2), 148-159.
- Kabiru, C.W. & Ezeh, A. (2007). Factors associated with sexual abstinence among adolescents in four sub-saharan African countries. *African Journal of Reproductive Health*, 11(3), 111-132.
- Kaiser Family Foundation, & YM Magazine. (1998). *National Survey of Teens: teens talk about dating, intimacy, and their sexual experiences*. Menlo Park, CA: Kaiser Family Foundation.
- Kallianes, V., & Rubinfeld, P. (1997). Disabled women and reproductive rights. *Disability and Society*, 12(2), 203-221.
- Kalyva, E. (2007). Prevalence and influences on self-reported smoking among adolescents with mild learning disabilities, attention deficit hyperactivity disorder, and their typically developing peers. *Journal of Intellectual Disabilities*, 11(3), 267-279.
- Karim, A.M., Magnani, R.J., Morgan, G.T., & Bond, K.C. (2003). Reproductive health risk and protective factors among unmarried youth in Ghana. *International Family Planning Perspectives*, 29(1), 14-24.
- Kastner, T.A., Hickman, M.L., & Bellehumeur, D. (1989). The provision of services to persons with mental retardation and subsequent infection with Human Immunodeficiency Virus (HIV). *American Journal of Public Health*, 79(4), 491-494
- Kef, S., & Bos, H. (2006). Is love blind? Sexual behavior and psychological adjustment of adolescents with blindness. *Sexuality and Disability*, 24(2), 89-100.
- Kempton, W., & Kahn, E. (1991). Sexuality and people with intellectual disabilities: a historical perspective. *Sexuality and Disability*, 9(2), 93-111.
- Kim, J.L., Collins, R.L., Kanouse, D.E., Elliot, M.N., Berry, S.H., Hunter, S.B., et al. (2006). Sexual readiness, household policies, and other predictors of adolescents' exposure to sexual content in mainstream entertainment television. *Media Psychology*, 8(4), 449-471.
- Kirby, D., Short, L., Collins, J., Rugg, D., Kolbe, L., Howard, M., et al. (1994). School-based programs to reduce sexual risk behaviors: a review of effectiveness. *Public Health Reports*, 109(3), 339-360.

- Kirby, D.B., Laris, B.A., & Rolleri, L.A. (2007). Sex and HIV education programs: their impact on sexual behaviors of young people throughout the world. *Journal of Adolescent Health, 40*(3), 206-217.
- Knox, D., & Wilson, K. (1981). Dating behaviors of university students. *Family Relations, 30*(2), 255-258.
- Koniak-Griffin, D., Lesser, J., Uman, G., & Nyamathi, A. (2003). Teen pregnancy, motherhood and unprotected sexual activity. *Research in Nursing & Health, 26*(1), 4-19.
- Kotwal, A., Thakur, R., & Seth, T. (2005). Correlates of tobacco-use pattern amongst adolescents in two schools of New Delhi, India. *Indian Journal of Medical Sciences, 59*(6), 243-252.
- Krahn, G.L., Hammond, L., & Turner, A. (2006). A cascade of disparities: health and health care access for people with intellectual disabilities. *Mental Retardation and Developmental Disabilities Research Reviews, 12*(1), 70-82.
- Kromberg, J., Zwane, E., Manga, P., Venter, A., Rosen, E., & Christianson, A. (2008). Intellectual disability in the context of a South African population. *Journal of Policy and Practice in Intellectual Disabilities, 5*(2), 89-95.
- Kuh, D., Lawrence, C., Tripp, J., & Creber, G. (1988). Work and work alternatives of disabled young people. *Disability, Handicap & Society, 3*(1), 3-26.
- Kvam, M.H., & Braathen, S.H. (2008). "I thought...maybe this is my chance": sexual abuse against girls and women with disabilities in Malawi. *Sexual Abuse: A Journal of Research and Treatment, 20*(1), 5-24.
- Lachin, J.M. (2000). *Biostatistical methods*. New York: John Wiley & Sons.
- Lang, R., & Upah, L. (2008). *Scoping study: disability issues in Nigeria: DFID*.
- Last, J.M. (Ed.) (1995) *A dictionary of epidemiology*. New York: Oxford University Press.
- Lau, C., & Muula, A.S. (2004). HIV/AIDS in sub-Saharan Africa. *Croatian Medical Journal, 45*(4), 402-414.
- Lawrenson, J.B., Kalis, N.N., Pribut, H., Hewitson, J., Shipton, S., Stirling, J., et al. (2006). Why are some South African children with Down syndrome not being offered cardiac surgery? *South African Medical Journal, 96*(9), 914-919.
- Lema, V.M. (1990). Sexual behaviour, contraceptive practice and knowledge of reproductive biology among adolescent secondary school girls in Nairobi, Kenya. *East African Medical Journal, 67*(2), 86-94.
- Leonard, H., & Wen, X. (2002). The epidemiology of mental retardation: challenges and opportunities in the new millennium. *Mental Retardation and Developmental Disabilities Research Reviews, 8*(3), 117-134.
- Lesseliers, J., & Van Hove, G. (2002). Barriers to the development of intimate relationships and the expression of sexuality among people with developmental disabilities: their perceptions. *Research & Practice for Persons with Severe Disabilities, 27*(1), 69-81.
- Leutar, Z., & Mihoković, M. (2007). Level of knowledge about sexuality of people with mental disabilities. *Sexuality and Disability, 25*(3), 93-109.
- Lin, J.D., Wu, J.L., & Lee, P.N. (2003). Healthcare needs of people with intellectual disability in institutions in Taiwan: outpatient care utilization and implications. *Journal of Intellectual Disability Research, 47*(3), 169-180.

- Lin, J.D., Wu, J.L., & Lee, P.N. (2004). Utilization of inpatient care and its determinants among persons with intellectual disabilities in day care centres in Taiwan. *Journal of Intellectual Disability Research*, 48(7), 655-662.
- Low, W.Y., & Zubir, T.N. (2000). Sexual issues of the disabled: implications for public health education. *Asia Pacific Journal of Public Health*, 12(Suppl), S78-S83.
- Löwe, U. (2007). *AdRisk: community action on adolescent and injury risk*. Paper presented at the European Safe Start Summit. Retrieved 18 March 2008, from www.adrisk.eu.com.
- Luckasson, R., Borthwick-Duffy, S., Buntinx, W.H.E., Coulter, D.L., Craig, E.M., Reeve, A., et al. (2002). *Mental retardation: definition, classification and systems of supports* (10th ed.). Washington, D. C.: American Association on Mental Retardation.
- Lugoe, W.L., & Biswalo, P.M.C.A. (1997). Self-restraining and condom use behaviours: the HIV/AIDS prevention challenges in Tanzanian schools. *International Journal of Adolescence & Youth*, 7(1), 67-81.
- Lugoe, W.L., Klepp, K.I., & Skutle, A.C.A. (1996). Sexual debut and predictors of condom use among secondary school students in Arusha, Tanzania. *AIDS Care*, 8(4), 443-452.
- Lumley, V.A., & Scotti, J.R. (2001). Supporting sexuality of adults with mental retardation: current status and future directions. *Journal of Positive Behavior Interventions*, 3(2), 109-119.
- Maag, J.W., Irvin, D.M., Reid, R., & Vasa, S.F. (1994). Prevalence and predictors of substance use: a comparison between adolescents with and without learning disabilities. *Journal of Learning Disability*, 27(4), 233-234.
- Mabayoje, V.O., Akinwusi, P.O., Fadiora, S.O., Adeyeba, O.O., Adeyeba, O.A., Aderounmu, A.O., et al. (2005). Sexual risk behaviour among young people in Osogbo, Osun state Nigeria. *Tropical Doctor*, 35(4), 213-215.
- MacMillan, D.L., Gresham, F.M., & Siperstein, G.N. (1995). Heightened concerns over the 1992 AAMR definition: advocacy versus precision. *American Journal of Mental Retardation*, 100(1), 87-89.
- MacPhail, C., & Campbell, C. (2001). "I think condoms are good but aai, I hate those things": condom use among adolescents and young people in South African township. *Social Science and Medicine*, 52(11), 1613-1627.
- Mallory, B.L. (1993). Changing beliefs about disability in developing countries: historical factors and sociocultural variables. In D. E. Woods (Ed.), *Traditional and changing views of disability in developing societies: causes, consequences, cautions* (pp. 1-24). Durham: The International Exchange of Experts and Information in Rehabilitation (IEEIR).
- Manuel, S. (2005). Obstacles to condom use among secondary school students in Maputo city, Mozambique. *Culture, Health & Sexuality*, 7(3), 293-302.
- Marchetti, A.G., Nathanson, R.S., Kastner, T.A., & Owens, R. (1990). AIDS and state developmental disability agencies: a national survey. *American Journal of Public Health*, 80(1), 54-56.
- Martiniuk, A.L., O'Connor, K.S., & King, W.D. (2003). A cluster randomized trial of a sex education programme in Belize, Central America. *International Journal of Epidemiology*, 32(1), 131-136.
- Matasha, E., Ntembelea, T., Mayaud, P., Saidi, W., Todd, J., Mujaya, B., et al. (1998). Sexual and reproductive health among primary and secondary school pupils in Mwanza, Tanzania: need for intervention. *AIDS Care*, 10(5), 571-582.

- Maticka-Tyndale, E., Wildish, J., & Gichuru, M. (2007). Quasi-experimental evaluation of a national primary school HIV intervention in Kenya. *Evaluation and Program Planning*, 30(2), 172-186.
- Mattson, M. (2002). Impact of HIV test counseling on college students' sexual beliefs and behaviors. *American Journal of Health Behavior*, 26(2), 121-136.
- May, P.A., Gossage, J.P., Marais, A.S., Adnams, C.M., Hoyme, H.E., Jones, K.L., et al. (2007). The epidemiology of fetal alcohol syndrome and partial FAS in a South African community. *Drug and Alcohol Dependence*, 88(2-3), 259-271.
- Mba, C.I., Obi, S.N., & Ozumba, B.C. (2007). The impact of health education on reproductive health knowledge among adolescents in a rural Nigerian community. *Journal of Obstetrics and Gynaecology*, 27(5), 513-517
- Mbogoni, M. (2002). *Disability census questions, the perspective of developing countries*. Paper presented at the First Meeting of the Washington Group on Disability Statistics. Retrieved 21 August, 2009, from <http://www.cdc.gov/nchs/citygroup/products/mbogoni1.htm>.
- Mburano R. (2002). Sexual risk behaviours among young people in Bamenda, Cameroon. *International Family Planning Perspectives*. 26, 118-123
- McCabe, M.P. (1999). Sexual knowledge, experience and feelings among people with disability. *Sexuality and Disability*, 17(2), 157-170.
- McCabe, M.P., Cummins, R.A., & Deeks, A.A. (1999). Construction and psychometric properties of sexuality scales: sex knowledge, experience, and needs scales for people with intellectual disabilities (SexKen-ID), people with physical disabilities (SexKen-PD), and the general population (SexKen-GP). *Research in Developmental Disabilities*, 20(4), 241-254.
- McCabe, M.P., Cummins, R.A., & Reid, S.B. (1994). An empirical study of the sexual abuse of people with intellectual disability. *Sexuality and Disability*, 12(4), 297-306.
- McCabe, M.P., & Taleporos, G. (2003). Sexual esteem, sexual satisfaction, and sexual behavior among people with physical disability. *Archives of Sexual Behavior*, 32(4), 359-369.
- McCarthy, M. (1998). Interviewing people with intellectual disabilities about sensitive issues: a discussion of ethical issues. *British Journal of Learning Disabilities*, 26(4), 140-145.
- McCrystal, P., Percy, A., & Higgins, K. (2007). Substance use behaviors of young people with a moderate learning disability: a longitudinal analysis. *The American Journal of Drug and Alcohol Abuse*, 33(1), 155-161.
- McGillicuddy, N.B. (2006). A review of substance use research among those with mental retardation. *Mental Retardation and Developmental Disabilities Research Reviews*, 12(1), 41-47.
- McGillivray, J.A. (1999). Level of knowledge and risk of contracting HIV/AIDS amongst young adults with mild/moderate intellectual disability. *Journal of Applied Research in Intellectual Disabilities*, 12(2), 113-126.
- McGillivray, J.A., & Moore, M.R. (2001). Substance use by offenders with mild intellectual disability. *Journal of Intellectual & Developmental Disability*, 26(4), 297-310.
- Medel-Anonuevo, C., & Cheick, M.D. (2007). *Making the connections: why literacy matters for HIV prevention*. Hamburg: UNESCO Institute for Lifelong Learning.

- Meel, B. (2009). Prevalence of HIV among victims of sexual assault who were mentally impaired children (5 to 18) in the Mthatha area of South Africa [Electronic Version]. *African Journal of Primary Health Care & Family Medicine, 1*. Retrieved 9 November, 2009 from <http://www.phcfm.org>.
- Messent, P.R., Cooke, C.B., & Long, J. (2000). Secondary barriers to physical activity for adults with mild and moderate learning disabilities. *Journal of Learning Disabilities, 4*(3), 247-263.
- Miller, B.C., Christensen, R.B., & Olson, T.D. (1987). Adolescent self-esteem in relation to sexual attitudes and behavior. *Youth and Society, 19*(1), 93-111.
- Miller, B.C., McCoy, J.K., & Olson, T.D. (1986). Dating age and stage as correlates of adolescent sexual attitudes and behavior. *Journal of Adolescent Research, 1*(3), 361-371.
- Miller, E.J., & Gwynne, G.V. (1972). *A life apart*. London: Tavistock.
- Milligan, M.S., & Neufeldt, A.H. (2001). The myth of asexuality: a survey of social and empirical evidence. *Sexuality and Disability, 19*(2), 91-109.
- Minnes, P.M., Nachshen, J., & Woodford, L.M. (2003). The changing roles of families. In I. Brown & M. Percy (Eds.), *Developmental disabilities in Ontario* (2nd ed., pp. 663-676). Toronto: Ontario Association on Developmental Disabilities.
- Mitchell, A., Cleg, J., & Furniss, F. (2006). Exploring the meaning of trauma with adults with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities, 19*(2), 131-142.
- Mitchell, L.M., & Buchele-Ash, A. (2000). Abuse and neglect of individuals with disabilities: building protective supports through public policy. *Journal of Disability Policy Studies, 10*(2), 225-243.
- Mont, D. (2007). *Measuring disability prevalence*. Washington D. C.: Social Protection & Labor, The World Bank.
- Moore, S., Gullone, E., & McArthur, C. (2004). Risk taking and HIV/AIDS among young people in Camerron: prediction of vulnerability using the adolescent risk-taking questionnaire [Electronic Version]. *Social Behavior and Personality, 1*. Retrieved 19 April, 2008, from http://findarticles.com/p/articles/mi_qa3852/is_200401/ai_n9379416.
- Moronkola, O.A., & Fakeye, J.A. (2007-2008). Reproductive health knowledge, sexual partners, contraceptive use and motives for premarital sex among female sub-urban Nigerian secondary students. *International Quarterly of Community Health Education, 28*(3), 229-238.
- Mulindwa, I.N. (2003). *Study on reproductive health and HIV/AIDS among persons with disabilities in Kampala, Katakwi and Rakai Districts: knowledge, attitudes and practices*. Retrieved 21 August, 2007, from <http://v1.dpi.org/files/uploads/publications/study%20in%20kampala.pdf>.
- Munthali, A., Mvula, P., & Ali, S. (2004). *Effective HIV/AIDS and reproductive health information to people with disabilities: a final report*. Centre for Social Research: University of Malawi.
- Murphy, N.A., & Elias, E.R. (2006). Sexuality of children and adolescents with developmental disabilities. *Pediatrics, 118*(1), 398-403.
- Muthukrishna, N. (1996). *The inclusion of children with Down syndrome: a South African experience*. Paper presented at the 10th Annual World Congress of the International Association for the Scientific Study of Intellectual Disabilities (IASSID)

- National Population Commission (NPC) [Nigeria], & ORC Macro. (2003). *Nigeria Demographic and Health Survey*. Calverton, Maryland: National Population Commission and ORC Macro.
- Ndiaye, P., Abdallahi el, H.O., Diedhiou, A., Tal-Dia, A., & Lemort, J.P. (2005). Evaluation of condom use among students of the El Mina middle school in Nouakchott in the Islamic Republic of Mauritania. *Sante, 15*(3), 189-194.
- NERDC. (2003). *National Family Life and HIV Education Curriculum for Junior Secondary Schools in Nigeria*. Retrieved 3 April, 2008, from <http://www.actionhealthinc.org/publications/downloads/jnrcurriculum.pdf>.
- Newens, A.J., & McEwan, R. (1995). AIDS/HIV awareness training for young people with severe learning difficulties: an evaluation of two school programmes. *Journal of Advanced Nursing, 22*(2), 267-275.
- Nganzi, P., & Matonhodze, G. (2004). *Disability and HIV & AIDS: a participatory rapid assessment of the vulnerability, impact, and coping mechanisms of parents of disabled children on HIV & AIDS*. Retrieved 21 August, 2007, from http://www.asksource.info/pdf/32681_PRAdishivparents_2004.pdf.
- Ngoma, M.C., Prince, M., & Mann, A. (2003). Common mental disorders among those attending primary health clinics and traditional healers in urban Tanzania. *British Journal of Psychiatry, 183*(4), 349-355.
- Nicholis, R.W. (1993). An examination of some traditional attitudes towards disability. In D. E. Woods (Ed.), *Traditional and changing views of disability in developing societies: causes, consequences, cautions* (pp. 25-48). Durham: The International Exchange of Experts and Information in Rehabilitation (IEEIR).
- Nigerians with Disability Decree, (1993).
- Nishimura, Y.H., Ono-Kihara, M., Mohith, J.C., Ngmansun, R., Homma, T., Diclemente, R.J., et al. (2007). Sexual behaviors and their correlates among young people in Mauritius: a cross-sectional study [Electronic Version]. *BMC International Health and Human Rights, 7*. Retrieved 5 October, 2007, from http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=17919330
- Njenga, F. (2008). *Autism in Africa: a challenge in the management of an important disorder*. Paper presented at the 13th International Association for the Scientific Study of Intellectual Disabilities (IASSID) World Congress.
- Njenga, F. (2009). Perspectives of intellectual disability in Africa: epidemiology and policy services for children and adults. *Current Opinion in Psychiatry, 22*(5), 457-461.
- Njoki, E., Frantz, J., & Mpofu, R. (2007). Health-promotion needs of youth with a spinal cord injury in South Africa. *Disability and Rehabilitation, 29*(6), 465-472.
- Nunkoosing, K., & John, M. (1997). Friendships, relationships and the management of rejection and loneliness by people with learning disabilities. *Journal of Intellectual Disabilities, 1*(1), 10-18.
- Nwankwo, B.O., & Nwoke, E.A. (2009). Risky sexual behaviours among adolescents in Owerri Municipal: predictors of unmet family health needs. *African Journal of Reproductive Health, 13*(1), 135-145.

- Nwaorgu, O., C., Onyeneho, N.G., Onyegegbu, N., Okolo, M., Ebele, O., Ugochukwu, G., et al. (2009). Family Life and HIV/AIDS Education (FLHE) in schools in Enugu State: baseline study of reproductive health issues among in-school adolescents in Enugu State. *African Journal of Reproductive Health*, 13(2), 17-32.
- Nwokocha, A.R., & Nwakoby, B.A. (2002). Knowledge, attitude, and behavior of secondary (high) school students concerning HIV/AIDS in Enugu, Nigeria, in the year 2000. *Journal of Pediatric and Adolescent Gynecology*, 15(2), 93-96.
- O'Neill, R.E., Horner, R.H., Albin, R.W., Sprague, J.R., Storey, K., & Newton, J.S. (1997). *Functional assessment and program development for problem behavior: a practical handbook* (2nd ed.). Pacific Grove: Brooks/Cole.
- Odimegwu, C. (2005). Influence of religion on adolescent sexual attitudes and behaviour among Nigerian university students: affiliation or commitment? *Journal of Reproductive Health*, 9(2), 125-140.
- Odimegwu, C.O., Solanke, L.B., & Adedokun, A. (2002). Parental characteristics and adolescent sexual behaviour in Bida Local Government area of Niger State, Nigeria. *African Journal of Reproductive Health*, 6(1), 95-106.
- Odu, O.O., Asekun-Olarinmoye, E.O., Bamidele, J.O., Egbewale, B.E., Amusan, O.A., & Olowu, A.O. (2007). Knowledge, attitudes to HIV/AIDS and sexual behaviour of students in a tertiary institution in south-western Nigeria. *European Journal of Contraception & Reproductive Health Care*, 13(1), 90-96.
- Odujinrin, O.M.T., & Akinkuade, F.O. (1991). Adolescents AIDS knowledge, attitude and beliefs about preventive practices in Nigeria. *European Journal of Epidemiology*, 7(2), 127-133.
- Ogunbodede, E.O. (2004). HIV/AIDS situation in Africa. *International Dental Journal*, 54(6 Suppl 1), 352-360.
- Ojo, O.D., & Fasubaa, O.B. (2005). Adolescent sexualit and family life education in South Western Nigeria: responses from focus group discussion. *Journal of Social Sciences*, 10(2), 111-118.
- Okonkwo, P.I., Fatusi, A.O., & Ilika, A.L. (2005). Perception of peers' behaviour regarding sexual health decision making among female undergraduates in Anambra State, Nigeria. *African Health Sciences*, 5(2), 107-113.
- Okpani, A.O.U., & Okpani, J.U. (2000). Sexual activity and contraceptive use among female adolescents - a report from Port Harcourt, Nigeria. *African Journal of Reproductive Health*, 4(1), 40-47.
- Oladepo, O., & Brieger, W.R. (2000). Sexual attitudes and behaviour of male secondary school students in rural and urban areas of Oyo State, Nigeria. *African Journal of Reproductive Health*, 4(2), 21-34.
- Oladokun, A., Morhason-Bello, I.O., Enakpene, C.A., Owonikoko, K.M., Akinyemi, J.O., & Obisesan, K.A. (2007). Sexual behaviour and contraceptive usage of secondary school adolescents in Ibadan, Nigeria. *Journal of Reproduction & Contraception*, 18(4), 279-288.
- Olaleye, A.O., Anoemuah, O.A., Ladipo, O.A., Delano, G.E., & Idowu, G.F. (2007). Sexual behaviours and reproductive health knowledge among in-school young people with disabilities in Ibadan, Nigeria. *Health Education*, 107(2), 208-218.

- Olawuyi, O. (2006). *Prevalence of HIV/AIDS among deaf students in Nigeria: causes and remedies*. Paper presented at the XVI International AIDS Conference. Retrieved 21 August, 2009, from <http://www.aegis.com/conferences/iac/2006/WePE0563.pdf>.
- Olayinka, B.A., & Osho, A.A. (1997). Changes in attitude, sexual behaviour and the risk of HIV/AIDS transmission in southwest Nigeria. *East African Medical Journal*, 74(9), 554-560.
- Oliver, M. (1990). *The politics of disablement: a sociological approach*. New York: St. Martin's Press.
- Oliver, M. (1996). *Understanding disability: from theory to practice* (First ed.). Houndmills.Basingstoke.Hampshire.London: Macmillan Press Ltd.
- Oliver, M.N., Anthony, A., Leimkuhl, T.T., & Skillman, G.D. (2002). Attitudes toward acceptable socio-sexual behaviors for persons with mental retardation: implications for normalization and community integration. *Education and Training in Mental Retardation and Developmental Disabilities*, 37(2), 193-201.
- Olusanya, B.O. (2009). Optimising the use of routine immunisation clinics for early childhood development in sub-Saharan Africa. *Vaccine*, 27(28), 3719-3723.
- Olusanya, B.O., & Ofovwe, G.E. (2009). Predictors of preterm births and low birthweight in an inner-city hospital in sub-Saharan Africa [Electronic Version]. *Maternal and Child Health Journal*. Retrieved 1 November, 2009, from <http://www.ncbi.nlm.nih.gov/pubmed/19795198>; <http://www.springerlink.com/content/f77pq244677q1462/>.
- Oredugba, F.A. (2006). Use of oral health care services and oral findings in children with special needs in Lagos, Nigeria. *Special Care Dentist*, 26(2), 59-65.
- Oredugba, F.A. (2007). Oral health condition and treatment needs of a group of Nigerian individuals with Down syndrome. *Down Syndrome Research and Practice*, 12(1), 72-77.
- Oredugba, F.A., & Sanu, O.O. (2006). Knowledge and behavior of Nigerian dentists concerning the treatment of children with special needs [Electronic Version]. *BMC Oral Health* 6. Retrieved 18 August, 2009, from <http://www.biomedcentral.com/1472-6831/6/9>.
- Orji, E.O., & Esimai, O.A. (2005). Sexual behaviour and contraceptive use among secondary school students in Ilesha South West Nigeria. *Journal of Obstetrics and Gynaecology*, 25(3), 269-272.
- Oshi, D.C., Nakalema, S., & Oshi, L.L. (2005). Cultural and social aspects of HIV/AIDS sex education in secondary schools in Nigeria. *Journal of Biosocial Science*, 37(2), 175-183.
- Osoimehin, B., Dare, L., & Ojengbede, O. (1994). *Sexual behavior and prevalence of STD and HIV infection in Nigerian adolescents*. Paper presented at the International AIDS Conference.
- Osoyole, O.S., & Oladepo, O. (2000). Effect of peer education on deaf secondary school students' HIV/AIDS knowledge, attitudes and sexual behaviour. *African Journal of Reproductive Health*, 4(2), 93-103.
- Otaigbe, B.E. (2007). Down syndrome in one of non-identical Nigerian twins: a case report. *Nigerian Journal of Medicine*, 16(1), 74-76.
- Otte, W.M., van der Maas, F., & de Boer, A. (2008). Comparison of knowledge and accessibility to information sources of HIV/AIDS between blind and sighted populations in Nigeria. *AIDS Care*, 20(9), 1093-1097.

- Ouellette-Kuntz, H. (2005). Understanding health disparities and inequities faced by individuals with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 18(2), 113-121.
- Ovuga, E., Kipp, W., Mungherera, M., & Kasoro, S. (1992). Epilepsy and retarded growth in a hyperendemic focus of onchocerciasis in rural western Uganda. *East African Medical Journal* 69(10), 554-556.
- Owolabi, A.T., Onayade, A.A., Ogunlola, I.O., Ogunniyi, S.O., & Kuti, O. (2005). Sexual behaviour of secondary school adolescents in Ilesa, Nigeria: implications for the spread of STIs including HIV/AIDS. *Journal of Obstetrics and Gynaecology*, 25(2), 174-178.
- Oyo-Ita, A.E., Ikpeme, B.M., Etokidem, A.J., Offor, J.B., Okokon, E.O., & Etuk, S.J. (2005). Knowledge of HIV/AIDS among secondary school adolescents in Calabar-Nigeria. *Annals of African Medicine*, 4(1), 2-6
- Oyo State Government. (2009). About Oyo State. Retrieved 22 December, 2009, from <http://oyostate.gov.ng/about-oyo/brief-overview>
- Oyo State Ministry of Health. (2009-2010). Retrieved 17 May, 2010, from <http://www.oyohealth.org/>
- Palen, L.-A., Smith, E.A., Flisher, A.J., Caldwell, L.L., & Mpofu, E. (2006). Substance use and sexual risk behavior among South African eighth grade students. *Journal of Adolescent Health*, 39(5), 761-763.
- Park, I.U., Sneed, C.D., Morisky, D.E., Alvear, S., & Hearst, N. (2002). Correlates of HIV risk among Ecuadorian adolescents. *AIDS Education and Prevention*, 14(1), 73-83.
- Parmenter, T., Einfeld, S., & Tonge, B. (1998). Behavioural and emotional problems in the classroom of children and adolescents with intellectual disability. *Journal of Intellectual Developmental Disability*, 23(1), 71-78.
- Parmenter, T.R. (2008). The present, past and future of the study of intellectual disability: challenges in developing countries. *Salud Pública de México*, 50(Suplemento 2), S124-S131.
- Patrick, M.E., Collins, L.M., Smith, E., Caldwell, L., Flisher, A., & Wegner, L. (2009). A prospective longitudinal model of substance use onset among South African adolescents. *Substance Use & Misuse*, 44(5), 647-662.
- Paul-Ebhohimhen, V., Poobalan, A., & van Teijlingen, E.R. (2008). A systematic review of school-based sexual health interventions to prevent STI/HIV in sub-Saharan Africa [Electronic Version]. *BMC Public Health*, 8. Retrieved 4 November, 2009 from <http://www.biomedcentral.com/1471-2458/8/4>.
- Paz-Bailey, G., Kilmarx, P.H., Supawitkul, S., Chaowanachan, T., Jeeyapant, S., Sternberg, M., et al. (2003). Risk factors for sexually transmitted diseases in northern Thai adolescents: an audio-computer-assisted self-interview with noninvasive specimen collection. *Sexually Transmitted Diseases*, 30(4), 320-326.
- Pela, O.A. (1989). Patterns of adolescent psychoactive substance use and abuse in Benin City, Nigeria. *Adolescence*, 24(95), 569-574.
- Peltzer, K., & Promtussananon, S. (2005). HIV/AIDS knowledge and sexual behavior among junior secondary school students in South Africa. *Journal of Social Sciences*, 1(1), 1-8.
- Pennington, J. (2007, 30th July 2007). HIV & AIDS in Nigeria. Retrieved 8 August, 2007, from <http://www.avert.org/aids-nigeria.htm>

- Penny, G.N., Bennett, P., Herbert, M., & Herbert, M. (1994). *Health Psychology: a lifespan perspective*. Philadelphia: Psychology Press.
- Perkins, D.F. (2001). Adolescence: The four questions (Publication. Retrieved 1 March, 2008, from University of Florida, IFAS Extension: <http://edis.ifas.ufl.edu>
- Philander, J.H., & Swartz, L. (2006). Needs, barriers and concerns regarding HIV prevention among South Africans with visual impairments: a key informant study. *Journal of Visual Impairment & Blindness*, *100*(2), 111-114.
- Pillay, A.L., & Kritzinger, A.M. (2008). Psycho-legal issues surrounding the rape of children and adolescents with mental retardation. *Journal of Child and Adolescent Mental Health*, *20*(2), 123-131.
- Pincus, S.H., Schoenbaum, E.E., & Webber, M. (1990). A seroprevalence survey for human immunodeficiency virus antibody in mentally retarded adults. *New York State Journal of Medicine*, *90*(3), 139-142.
- Pledgie, T.K., & Schumacher, S.H. (1993). Determining the prevalence of human immunodeficiency virus (HIV) within a residential facility for persons with mental retardation. *American Journal on Mental Retardation*, *97*(5), 585-588.
- Plotnick, R.D. (1992). The effects of attitudes on teenage premarital pregnancy and its resolution. *American Sociological Review*, *57*(6), 800-811.
- Quist, H.O., Nyarko, S.O., & Deku, P. (2007). Social skills development among children with mental retardation and its implications for educational policy and management: a study of five special schools in Ghana. *IFI Psychologia*, *15*(1), 141-151.
- Raine, T.R., Jenkins, R., Aarons, S.J., Woodward, K., Fairfax, J.L., El-Khorazaty, M.N., et al. (1999). Sociodemographic correlates of virginity in seventh-grade black and Latino students-a psychosocial framework for understanding and action. *Journal of Adolescent Health*, *24*(5), 304-312(309).
- Raj, A., Reed, E., Miller, E., Decker, M.R., Rothman, E.F., & Silverman, J.G. (2007). Contexts of condom use and non-condom use among young adolescent male perpetrators of dating violence. *AIDS Care*, *19*(8), 970-973
- Raj, A., Silverman, J.G., & Amaro, H. (2000). The relationship between sexual abuse and sexual risk among high school students: findings from the 1997 Massachusetts youth risk behavior survey. *Maternal and Child Health Journal*, *4*(2), 125-134.
- Raven, J., Raven, J.C., & Court, J.H. (1998). *Raven manual: Standard Progressive Matrices*. England: Oxford Psychologists Press.
- Reddy, P., Resnicow, K., Omardien, R., & Kambaran, N. (2007). Prevalence and correlates of substance use among high school students in South Africa and the United States. *American Journal of Public Health*, *97*(10), 1859-1864.
- Resnick, M.D., Bearman, P.S., Blum, R.W., Bauman, K.E., Harris, K.M., Jones, J., et al. (1997). Protecting adolescents from harm: findings from the national longitudinal study on adolescent health. *Journal of the American Medical Association*, *278*(10), 823-832.
- Reynolds, C.R., & Hickman, J.A. (2004). *Draw-A-Person Intellectual Ability Test for Children, Adolescents, and Adults examiner's manual*. Austin, TX: Pro-ed.
- Rohleder, P., & Leslie, S. (2009). Providing sex education to persons with learning disabilities in the era of HIV/AIDS: tension between discourses of human rights and restriction. *Journal of Health Psychology*, *14*(4), 601-610.

- Rosen, M., Floor, L., & Baxter, D. (1974). The institutional personality. *British Journal of Mental Subnormality*, *17*, 125-131.
- Rotheram-Borus, M.J., & Koopman, C. (1991). Sexual risk behaviors, AIDS knowledge, and beliefs about AIDS among runaways. *American Journal of Public Health*, *81*(2), 208-210.
- Rouso, H. (2003). *Education for All: a gender and disability perspective*. Paris: UNESCO.
- Roussot, M.A., Lawrenson, J.B., Hewitson, J., Smart, R., & de Decker, H.P. (2006). Is cardiac surgery warranted in children with Down syndrome? *South African Medical Journal*, *96*(9), 924-930.
- Royal College of Psychiatrists. (2001). *Diagnostic Criteria for Psychiatric Disorders for use with adults with Learning disabilities/mental retardation (DC-LD)*. London: Gaskell Press.
- Rubin, G.S. (1993). Thinking sex: notes for a radical theory of the politics of sexuality. In C. Vance (Ed.), *Pleasure and danger: exploring female sexuality*. London: Routledge
- Rurangirwa, J., Braun, K.V., Schendel, D., & Yeargin-Allsopp, M. (2006). Healthy behaviors and lifestyles in young adults with a history of developmental disabilities. *Research in Developmental Disabilities*, *27*(4), 381-399.
- Rusakaniko, S., Mbizvo, M.T., Kasule, J., Gupta, V., Kinoti, S.N., Mpanju-Shumbushu, W., et al. (1997). Trends in reproductive health knowledge following a health education intervention among adolescents in Zimbabwe. *The Central African Journal of Medicine*, *43*(1), 1-6.
- Sahlu, T., Kassa, E., Agonafer, T., Tsegaye, A., Rinke de Wit, T., Gebremariam, H., et al. (1999). Sexual behaviours, perception of risk of HIV infection, and factors associated with attending HIV post-test counselling in Ethiopia. *AIDS*, *13*(10), 1263-1272.
- Sale, J.E.M., Lohfeld, L.H., & Brazil, K. (2002). Revisiting the quantitative-qualitative debate: implications for mixed-methods research. *Quality & Quantity*, *36*(1), 43-53.
- Sallah, E.D., Grunitzky-Bekele, M., Bassabi, K., Dodzro, K., Sadzo, A., Balogou, A.K., et al. (1999). [Sexual behavior, knowledge and attitudes to AIDS and sexually transmitted diseases of students at the University of Benin (Togo)]. *Sante*, *9*(2), 101-109.
- Samowitz, P., Levy, P., Levy, J., & Jacobs, R. (1989). A video AIDS prevention training program for people who are mentally retarded/developmentally disabled. Retrieved 29 March, 2008, from <http://gateway.nlm.nih.gov/MeetingAbstracts/ma?f=102179568.html>
- Santelli, J., Ott, M.A., Lyon, M., Rogers, J., Summers, D., & Schleifer, J.D. (2006a). Abstinence-only education policies and programs: a position paper of the Society for Adolescent Medicine. *Journal of Adolescent Health*, *38*(1), 83-87.
- Santelli, J., Ott, M.A., Lyon, M., Rogers, J., Summers, D., & Schleifer, J.D. (2006b). Abstinence and abstinence-only education: a review of U.S. policies and programs. *Journal of Adolescent Health*, *38*(1), 72-81.
- Sattler, J.M. (1982). *Assessment of children's intelligence and special abilities*. Boston: Allyn & Bacon.
- Sawin, K.J., Buran, C.F., Brei, T.J., & Fastenau, P.S. (2002). Sexuality issues in adolescents with a chronic neurological condition. *Journal of Perinatal Education*, *11*(1), 22-34.
- Sawyer, S.M., & Roberts, K.V. (1999). Sexual and reproductive health in young people with spina bifida. *Developmental Medicine & Child Neurology*, *41*(10), 671-675.

- Scotti, J., Slack, B., Bowman, R., & Morris, T. (1996). College student attitudes concerning the sexuality of persons with mental retardation: development of the perceptions of sexuality scale. *Sexuality and Disability, 14*(4), 249-263.
- Serpell, R., Mariga, L., & Harvey, K. (1993). Mental retardation in African countries: conceptualisation, services and research. *International Review of Research in Mental Retardation, 19*(1), 1-39.
- Shakespeare, T. (2000). Disabled sexuality: toward rights and recognition. *Sexuality and Disability, 18*(3), 159-166.
- Shrestha, S., & Weber, G. (2002). The situation of older people with intellectual disability in Nepal: a pilot study. *Journal of Intellectual Developmental Disability, 27*(4), 242-254.
- Siebelink, E.M., de Jong, M.D.T., Taal, E., & Roelvink, L. (2006). Sexuality and people with intellectual disabilities: assessment of knowledge, attitudes, experiences, and needs. *Journal of Mental Retardation, 44*(4), 283-294.
- Siegel, D.M., Aten, M.J., & Enaharo, M. (2001). Long-term effects of a middle school- and high school-based human immunodeficiency virus sexual risk prevention intervention. *Archives of Pediatrics & Adolescent Medicine, 155*(10), 1117-1126.
- Sieverding, J.A., Adler, N., Witt, S., & Ellen, J. (2005). The influence of parental monitoring on adolescent sexual initiation. *Archives of Pediatrics and Adolescent Medicine, 159*(8), 724-729.
- Sigelman, C.K., Budd, E.C., Spanhel, C.L., & Schoenrock, C.J. (1981). When in doubt, say yes: acquiescence in interviews with mentally retarded persons. *Mental Retardation, 19*(2), 53-58.
- Sigelman, C.K., Schoenrock, C.J., Spanhel, C.L., Hromas, S.G., Winer, J.L., Budd, E.C., et al. (1980). Surveying mentally retarded persons: responsiveness and response validity in three samples. *American Journal of Mental Deficiency, 84*(5), 479-486.
- Sigelman, C.K., Schoenrock, C.J., Winer, J.L., Spanhel, C.L., Hromas, S.G., Martin, P.W., et al. (1981). Issues in interviewing mentally retarded persons: an empirical study. In H. Bruininks, C.E. Meyers, B.B. Sigford & K.C. Lakin (Eds.), *Deinstitutionalization and community adjustment of mentally retarded people*. Washington, DC: American Association on Mental Deficiency.
- Sigelman, C.K., Winer, J.L., & Schoenrock, C.J. (1982). The responsiveness of mentally retarded persons to questions. *Education and Training of the Mentally Retarded, 17*(2), 120-124.
- Sinnette, C., & Odeku, E.L. (1968). Rubinstein-Taybi Syndrome. *Clinical Pediatrics, 7*(8), 488-492.
- Skinner, B.F. (1953). *Science and human behaviour*. New York: Macmillan
- Slap, G.B., Lot, L., Huang, B., Daniyam, C.A., Zink, T.M., & Succop, P.A. (2003). Sexual behaviour of adolescents in Nigeria: cross sectional survey of secondary school students. *British Medical Journal, 326*(7379), 15-20.
- Smith, J.A. (1996). Beyond the divide between cognition and discourse: using interpretative phenomenological analysis in health psychology. *Psychology and Health, 11*(2), 261-271.
- Smith, J.A., Jarman, M., & Osborn, M. (1999). Doing interpretative phenomenological analysis. In M. Murray & K. Chamberlain (Eds.), *Qualitative health psychology* (pp. 218-240). London: Sage.

- Snijders, T.A.B. (2001). Sampling. In A. Leyland & H. Goldstein (Eds.), *Multilevel Modelling of Health Statistics* (pp.159-174). New York: John Wiley & Sons, Inc.
- Sobsey, D., & Varnhagen, C. (1988). *Sexual abuse and exploitation of people with disabilities*. Ottawa: Health and Welfare Canada.
- Stanish, H.I., Temple, V.A., & Frey, G.C. (2006). Health-promoting physical activity of adults with mental retardation. *Mental Retardation and Developmental Disabilities Research Reviews*, 12(1), 13-21.
- Stanley, R. (1998). Primary health care provision for people with learning disabilities: a survey of general practitioners. *Journal of Intellectual Disabilities*, 2(1), 23-30.
- Steadman Group. (2008). *Research on knowledge, attitude, practice and accessibility of PWD to HIV and AIDS*. Paper presented at the 15th International Conference on AIDS and sexually transmitted infections in Africa (ICASA).
- Steckler, A., McLeroy, K.R., Goodman, R.M., Bird, S.T., & McCormick, L. (1992). Toward integrating qualitative and quantitative methods: an introduction. *Health Education & Behaviour*, 19(1), 1-8.
- Stretcher, V., & Rosenstock, I.M. (1997). The Health Belief Model. In K. Glantz, F.M., Lewis, & B.K. Rimer (Eds.). *Health behavior and health education: theory, research and practice*. San Francisco: Jossey-Bass
- Sukhodolsky, D.G., Kassinove, H., & Gorman, B.S. (2004). Cognitive-behavioral therapy for anger in children and adolescents: a meta-analysis. *Aggression and Violent Behavior*, 9(3), 247-269.
- Sunmonu, T.A., Komolafe, M.A., Ogunrin, A.O., Oladimeji, B.Y., & Ogunniyi, A. (2008). Intellectual impairment in patients with epilepsy in Ile-Ife, Nigeria. *Acta Neurologica Scandinavica*, 118(6), 395-401.
- Suris, J.C., Resnick, M.D., Cassuto, N., & Blum, R.W. (1996). Sexual behavior of adolescents with chronic disease and disability. *Journal of Adolescent Health*, 19(2), 124-131.
- Swain, J., Finkelstein, V., French, S., & Oliver, M. (1993). Disability: a social challenge or an administrative responsibility. In *Disabling barriers - enabling environments* (pp. 34-43). London.Newbury Park.New Dehli: SAGE Publications in association with The Open University.
- Swango-Wilson, A. (2008a). Caregiver perception of sexuality behaviors of individuals with intellectual disabilities. *Sexuality and Disability*, 26(2), 75-81.
- Swango-Wilson, A. (2008b). Caregiver perceptions and implications for sex education for individuals with intellectual and developmental disabilities. *Sexuality and Disability*, 26(3), 167-174.
- Taegtmeier, M., Hightower, A., Opiyo, W., Mwachiro, L., Henderson, K., Angala, P., et al. (2009). A peer-led HIV counselling and testing programme for the deaf in Kenya. *Disability and Rehabilitation*, 31(6), 508-514.
- Taleporos, G., & McCabe, M.P. (2001a). The impact of physical disability on body esteem. *Sexuality and Disability*, 19(4), 293-308.
- Taleporos, G., & McCabe, M.P. (2001b). Physical disability and sexual esteem. *Sexuality and Disability*, 19(2), 131-148.
- Tapert, S.F., Aarons, G.A., Sedlar, G.R., & Brown, S.A. (2001). Adolescent substance use and sexual risk-taking behaviour. *Journal of Adolescent Health*, 28(3), 181-189.

- Taylor, J.L., Lindsay, W.R., & Willner, P. (2008). CBT for people with intellectual disabilities: emerging evidence, cognitive ability and IQ effects. *Behavioural and Cognitive Psychotherapy*, 36(Special Issue 6), 723-733.
- Taylor, M., Dlamini, S.B., Kagoro, H., Jinabhai, C.C., & de Vries, H. (2003). Understanding high school students' risk behaviors to help reduce the HIV/AIDS epidemic in KwaZulu-Natal, South Africa. *The Journal of School Health*, 73(3), 97-100.
- Taylor, M., Dlamini, S.B., Nyawo, N., de Vries, H., Sathisparsad, R., Jinabhai, C.C., et al. (2007). The association between HIV testing and sexual behaviour amongst rural Zulu high school students in KwaZulu-Natal, South Africa. *The Southern African Journal of Epidemiology and Infection*, 22(1), 23-29.
- Temin, M.J., Okonofua, F.E., Omorodion, F.O., Renne, E.P., Coplan, P., Heggenhougen, H.K., et al. (1999). Perceptions of sexual behaviour and knowledge about sexually transmitted diseases among adolescents in Benin City, Nigeria. *International Family Planning Perspectives*, 25(4), 186-190 & 195.
- The White House. (2003). Fact sheet: the President's Emergency Plan for AIDS Relief. Retrieved 10 October, 2007, from <http://www.whitehouse.gov/news/releases/2003/01/20030129-1.html>
- Thomas, G., & Kroese, B.S. (2005). An investigation of students' with mild learning disabilities reactions to participating in sexuality research. *British Journal of Learning Disabilities*, 33(3), 113-119.
- Thomas, P. (2005). *Disability, poverty and the Millenium Development Goals: relevance, challenges and opportunities for DFID*. Retrieved 29 September, 2007, from <http://digitalcommons.ilr.cornell.edu/gladnetcollect/256>.
- Thornton, A. (1990). The courtship process and adolescent sexuality. *Journal of Family Issues*, 11(3), 239-273.
- Timmers, R.L., DuCharme, P., & Jacob, G. (1981). Sexual knowledge, attitudes and behaviors of developmentally disabled adults living in a normalized apartment setting. *Sexuality and Disability*, 4(1), 27-39.
- Touko, A. (2009). *About a neglected group in the fight against HIV/AIDS: sexual behaviour and HIV prevalence among deaf populations in Cameroon*. Paper presented at the 2nd Biennial International Conference of The African Association for Rhetoric.
- Umeora, O.U., Onuh, S.O., & Umeora, M.C. (2005). Socio-cultural barriers to voluntary blood donation for obstetric use in a rural Nigerian village. *African Journal of Reproductive Health*, 9(3), 72-76.
- UN. (1993). *Standard Rules on the Equalization of Opportunities for Persons with Disabilities*. New York: General Assembly Resolution 48/96.
- UN. (2003 - 2004). The United Nations and disabled persons - the first fifty years. Retrieved 14 October, 2009, from <http://www.un.org/esa/socdev/enable/dis50y00.htm>
- UN. (2006). *Convention on the Rights of Persons with Disabilities and Optional Protocol*. Retrieved 15 October, 2009, from <http://www.un.org/disabilities/documents/convention/convoptprot-e.pdf>.
- UN. (2006 - 2007). *Convention on the Rights of Persons with Disabilities: opening for signature*. Retrieved 14 October, 2009, from <http://www.un.org/disabilities/convention/signature.shtml>

- UN. (2008 - 2009a). Convention and Optional Protocol signatures and ratifications: countries and regional integration organizations. Retrieved 14 October, 2009, from <http://www.un.org/disabilities/countries.asp?navid=12&pid=166>
- UN. (2008 - 2009b). The Convention in brief: entry into force. Retrieved 14 October, 2009, from <http://www.un.org/disabilities/default.asp?id=210>
- UN. (2008 - 2009c). The Convention in brief: guiding principles of the Convention. Retrieved 14 October, 2009, from <http://www.un.org/disabilities/default.asp?navid=14&pid=156>
- UNAIDS. (2008). *2008 Report on the global AIDS epidemic*. Geneva: UNAIDS.
- UNAIDS/WHO. (2006). *2006 AIDS epidemic update: sub-Saharan Africa*. New York/Geneva: UNAIDS/WHO.
- UNDP. (2004). *Human Development Report: Nigeria*. Lagos: UNDP.
- UNESCO. (2006). *Strong foundations: Early Childhood Care and Education, EFA Global Monitoring Report 2007*. Paris: UNESCO.
- UNICEF/UNAIDS/WHO. (2002). *Young people and HIV/AIDS: opportunity in crisis*. New York/Geneva: UNICEF/UNAIDS/WHO
- Unuigbo, I.E., & Ogbeide, O. (1999). Sexual behaviour and perception of AIDS among adolescent girls in Benin City, Nigeria. *African Journal of Reproductive Health*, 3(1), 39-44.
- UPIAS. (1976). *Fundamental Principles of Disability*. London: Union of the Physically Impaired Against Segregation.
- Utulu, S.N., & Lawoyin, T.O. (2007). Epidemiological features of HIV infection among pregnant women in Makurdi, Benue State, Nigeria. *Journal of Biosocial Science*, 39(3), 397-408.
- Valois, R.F., Oeltmann, J.E., Waller, J., & Hussey, J.R. (1999). Relationship between number of sexual intercourse partners and selected health risk behaviors among public high school adolescents. *Journal of Adolescent Health*, 25(5), 328-335.
- Van Rie, A., Mupuala, A., & Dow, A. (2008). Impact of the HIV/AIDS epidemic on the neurodevelopment of preschool-aged children in Kinshasa, Democratic Republic of the Congo. *Pediatrics*, 122(1), e123-128.
- van Schrojenstein Lantman-de Valk, H.M.J. (2005). Health in people with intellectual disabilities: current knowledge and gaps in knowledge. *Journal of Applied Research in Intellectual Disabilities*, 18(4), 325-333.
- van Schrojenstein Lantman-de Valk, H.M.J., Metsemakers, J.F.M., Haveman, M.J., & Crebolder, H.F.J.M. (2000). Health problems in people with intellectual disability in general practice: a comparative study. *Family Practice*, 17(5), 405-407.
- Vavrus, F. (2006). Girls' schooling in Tanzania: the key to HIV/AIDS prevention? *AIDS Care*, 18(8), 863-871.
- Walker-Hirsch, L. (2007). Sexuality education and intellectual disability across the lifespan: a developmental, social, and educational perspective. In L. Walker-Hirsch (Ed.), *The facts of life and more: sexuality and intimacy for people with intellectual disabilities*. Baltimore.London.Sydney: Paul H. Brookes Publishing Co.
- Walkup, J., Sambamoorthi, U., & Crystal, S. (1999). Characteristics of persons with mental retardation and HIV/AIDS infection in a statewide medicaid population. *American Journal on Mental Retardation*, 104(4), 356-363.

- Walmsley, J. & Johnson, K. (2003). *Inclusive research with people with learning difficulties*. London: Jessica Kingsley.
- Warzak, W.J., & Page, T.J. (1990). Teaching refusal skills to sexually active adolescents. *Journal of Behavior Therapy and Experimental Psychiatry*, 21(2), 133-139.
- Wazakili, M., Mpofo, R., & Devlieger, P. (2006). Experiences and perceptions of sexuality and HIV/AIDS among young people with physical disabilities in a South African township: a case study. *Sexuality and Disability*, 24(2), 77-78.
- Wazakili, M., Mpofo, R., & Devlieger, P. (2009). Should issues of sexuality and HIV and AIDS be a rehabilitation concern? The voices of young South Africans with physical disabilities. *Disability and Rehabilitation*, 31(1), 32-41.
- Webb, D. (1997). *HIV and AIDS in Africa*. London.Chicago.Cape Town.Pietermaritzburg: Pluto Press, David Philip & University of Natal Press.
- Webb, O.J., & Rogers, L. (1999). Health screening for people with intellectual disability: the New Zealand experience. *Journal of Intellectual Disability Research*, 43(6), 497-503.
- Weeks, J. (1986). *Sexuality*. London: Tavistock.
- Weed, S.E., Ericksen, I.H., Lewis, A., Grant, G.E., & Wibberly, K.H. (2008). An abstinence program's impact of cognitive mediators and sexual initiation. *American Journal of Health Behavior*, 32(1), 60-73.
- Wellings, K., Nanchahal, K., Macdowall, W., McManus, S., Erens, B., Mercer, C.H., et al. (2001). Sexual behaviour in Britain: early heterosexual experience. *The Lancet*, 358(9296), 1843-1850.
- Whitaker, D.J., Miller, K.S., May, D.C., & Levin, M.L. (1999). Teenage partners' communication about sexual risk and condom use: the importance of parent-teenager discussions. *Family Planning Perspectives*, 31(3), 117-121.
- Whitbeck, L.B., Hoyt, D.R., Miller, M., & Kao, M.-Y. (1992). Parental support, depressed affect, and sexual experience among adolescents. *Youth and Society*, 24(2), 166-177.
- Willner, P. (2005). Readiness for cognitive therapy in people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 19(1), 5-16.
- WHO. (1975). *Education and treatment in human sexuality: the training of health professionals; report of a WHO meeting*. Geneva: World Health Organization.
- WHO. (1980). *International Classification of Impairments, Disabilities and Handicaps*: World Health Organization.
- WHO. (1992). *The ICD-10 classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines*. Retrieved 21 October, 2009, from <http://www.who.int/classifications/icd/en/bluebook.pdf>.
- WHO. (1995). *Press release (WHO/64)*. Geneva: World Health Organization.
- WHO. (1996). *ICD-10 guide for mental retardation*. Retrieved 21 October, 2009, from http://www.who.int/mental_health/media/en/69.pdf.
- WHO. (1998). *The second decade: improving adolescent health and development* (Programme brochure). Geneva: World Health Organization, Department of Child and Adolescent Health and Development.
- WHO. (1999). *International Classification of Functioning and Disability, Beta-2 draft, Short Version*. Geneva: World Health Organisation.
- WHO. (2001). *International Classification of Functioning, Disability and Health: ICF*. Geneva: World Health Organization.

- WHO. (2002). *Reducing risks, promoting healthy life*. Geneva: World Health Organization.
- WHO. (2004a). *Global strategy on diet, physical activity and health*. Retrieved 27 October, 2009, from http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_web.pdf.
- WHO. (2004b). *Young people's health in context. Health Behaviour in School-aged Children (HBSC) study: International report from the 2001/2002 survey*. Copenhagen: WHO.
- WHO. (2007). *Atlas: global resources for persons with intellectual disabilities*. Geneva: World Health Organization.
- WHO. (2008). *HIV/AIDS epidemiological surveillance report for the WHO African region: 2007 update*. Brazzaville: World Health Organization Regional Office for Africa.
- Wiegerink, D.J.H.G., Roebroek, M.E., Donkervoort, M., Stam, H.J., & Cohen-Kettenis, P.T. (2006). Social and sexual relationships of adolescents and young adults with cerebral palsy: a review. *Clinical Rehabilitation*, 20(12), 1023-1031.
- Williams Jr., T.O., Fall, A.-M., Eaves, R.C., & Woods-Groves, S. (2006). The reliability of scores for the Draw-A-Person Intellectual Ability Test for Children, Adolescents, and Adults. *Journal of Psychoeducational Assessment*, 24(2), 137-145.
- Willig, C. (2001). *Introducing qualitative research in psychology*. Buckingham: Open University.
- Wodi, B.E. (2005). HIV/AIDS knowledge, attitudes, and opinions among adolescents in the River States of Nigeria. *The International Electronic Journal of Health Education*, 8. Retrieved 3 July, 2008, from <http://www.iejhe.org>
- Woodring, J.C., Foley, S.M., Rado, G.S., Brown, K.R., & Hamner, D.M. (2006). *Journal of Disability Policy Studies*, 16(4), 248-258.
- Wouhabe, M. (2007). Sexual behaviour, knowledge and awareness of related reproductive health issues among single youth in Ethiopia. *African Journal of Reproductive Health*, 11(1), 14-21.
- Yoon, G.J. (2004). Predicting Korean adolescents' sexual behavior: individual, relationship, family, and extra-family factors. *Marriage & Family Review*, 36(1-2), 147-173.
- Yousafzai, A.K., Dlamini, P.J., Groce, N.E., & Wirz, S. (2004). Knowledge, personal risk and experiences of HIV/AIDS among people with disabilities in Swaziland. *International Journal of Rehabilitation Research*, 27(3), 247-251.
- Yousafzai, A.K., Edwards, K., D'Allesandro, C., & Lindström, L. (2005). HIV/AIDS information and services: the situation experienced by adolescents with disabilities in Rwanda and Uganda. *Disability and Rehabilitation*, 27(22), 1357-1363.

APPENDIX A: INFORMED CONSENT PROCEDURE FOR LEARNERS WITH INTELLECTUAL IMPAIRMENT

HIV/AIDS knowledge, attitudes and sexual practices among intellectually impaired and mainstream learners in selected schools in Oyo State, Nigeria

Good morning/afternoon. My name is Toyin Aderemi. I am studying at the University of KwaZulu-Natal, Durban, South Africa. I want to talk to learners with and without special education needs to find out what they know about HIV/AIDS and sex. I want to find out where people learn about HIV/AIDS, what they know about HIV/AIDS, whether they have girlfriends/boyfriends, what they know about sexually transmitted infections, and whether their blood has been tested for HIV. In addition, I also want to know what learners feel about not having sex. Many learners like you in schools in Oyo State are also going to talk to me about all these.

If you talk to me, you will help me find out about these things and I can use what you tell me to try and make HIV/AIDS education available in a way that learners with special needs can understand. But talking to me will take some of your time.

Some of the questions are very personal (the most personal question asks if you have ever had sex), but I will not tell anyone else about everything you tell me. The only time I will have to pass on information to anyone else would be if you tell me you are being hurt by someone else or you yourself are hurting other people. And the reason I would have to tell someone else is so that you could be helped. If you tell me that someone is hurting you or you are hurting someone else, I will tell the police, the Oyo State Ministry of Women Affairs, Community Development and Social Welfare and the Association for Reproductive and Family Health in Ibadan so that they can help you. I will make sure that they treat you well.

If you are happy with it, I will also tape record my talk with you. Refreshments will be served after the interview or discussion.

The questions I want to ask you will take about 45 minutes or 1 hour. If you don't want to answer a question, tell me and we can skip to the next one. If you feel uncomfortable and would

like to stop talking, tell me. You can ask to stop and leave at any time. If you do not want to talk to me today, please say no. I can always talk to someone else.

Would you like to talk to me today?

If yes say: “Thank you (student’s name), before we can start I just need to ask a few questions to make sure that I have explained everything properly”.

1. What will I be talking to you about today?*
2. How long will it take?
3. Can you think of a reason why you might not want to talk to me?
4. If you do not want to answer any of my questions, what can you do?*
5. When would I have to tell someone else what you have told me?*
6. Are you still happy to take part in this study?*

Criteria for inclusion

*Questions 1, 4, and 5 must be answered correctly. Questions 2 and 3 can be incorrect, but the interviewer must repeat the correct answers and then check to see if the participant has understood by repeating the question. To be included in the study, question 6 must be answered in the affirmative.

APPENDIX B: FOCUS GROUP DISCUSSION GUIDE

Introduction

Good day. Thank you very much for participating in this study. My name is Toyin Aderemi. I am a PhD student of the University of KwaZulu-Natal, South Africa. I have obtained permission to carry out this study from the Oyo State Ministry of Education and your school authority.

The purpose of this discussion is to explore your views, opinions and experiences about HIV/AIDS knowledge, attitudes and sexual behaviour, as well as sexual abstinence among young people of your age. You have been selected for this interview because you represent your peers/fellow students/friends.

Your responses will not be linked to your name to ensure anonymity and confidentiality. You also should not discuss personal information of members of this group with others. I cannot guarantee that this will not happen. I will not discuss your responses with anybody else. The only condition under which I could give personal information to someone else is if you tell me that you are being hurt by someone or hurting another person. And I would do that so that you could receive help. In addition, such information might be released if required by law.

Please answer the questions as best as you can. You are free not to answer a question that you are not comfortable with. I am only interested in your personal opinions and experiences, and there are no right or wrong answers. I therefore encourage you to feel free to contribute to the discussion. Raise your hand when you want to talk/contribute, and do not laugh or shout at anybody.

Please feel free to interrupt and ask for clarifications if you are unsure about a question.

I would further like to ask for your permission to tape record this interview.

1) HIV/AIDS Awareness

Topic Focus	Core Question	Prompts & expansion materials
AIDS awareness	Have you ever heard of AIDS?	What causes AIDS?
Difference between HIV and AIDS	What is the difference between HIV and AIDS?	What is HIV? What is AIDS?
AIDS signs & symptoms	How do you know someone has AIDS?	Have you ever seen anyone who has AIDS?

2) HIV Transmission

Topic Focus	Core Question	Prompts & expansion materials
HIV transmission routes	Tell me the ways one can get infected with HIV	In what other ways can a person get infected with HIV?

3) Sources of HIV/AIDS Information

Topic Focus	Core Question	Prompts & expansion materials
Main sources of HIV/AIDS information	Whom or what do young people of your age depend on for HIV/AIDS information?	Role of parents, siblings, relations, friends, teachers (school HIV/AIDS education) Role of media—radio, TV, magazines
Most frequently used or most important sources of HIV/AIDS information	Whom or what are your most frequently used sources of HIV/AIDS information?	
Types of HIV/AIDS information	What are the kinds of information you usually get from those sources?	Transmission, prevention , HIV testing centres

4) Sexual Behaviour

Topic Focus	Core Question	Prompts & expansion materials
Commencement of sexual activity	<p>What proportion of young people of your age do you think are sexually active?</p> <p>At what age would you say young people start to have sex?</p> <p>What discussions or negotiations take place before sex takes place?</p> <p>Is it generally acceptable for young people to have sex before marriage?</p> <p>How do people react when a young woman becomes pregnant/a young man becomes a father?</p>	<p>Are young men and women treated differently?</p> <p>Feelings and reactions about young people's sexual activity amongst parents, elders, relations and other young people</p>
Abstinence	<p>Is abstinence actively promoted?</p> <p>Do young people of your age actively abstain from having sex?</p>	<p>Reasons for abstinence messages</p> <p>Young people's views about the messages</p> <p>Gender differences</p>
	<p>Why do you think young men of your age have sex?</p> <ul style="list-style-type: none"> — What do you think they get out of it? — What do you think it means to them? 	

Reasons for having sex	<p>Why do you think young women of your age have sex?</p> <ul style="list-style-type: none"> — What do you think they get out of it? — What do you think it means to them? <p>Do young people have sex with others apart from those they are dating?</p> <ul style="list-style-type: none"> — How? — With whom? — About how many? 	<p>Feelings about young people's sexual activity</p> <p>Does it affect how they feel about themselves (self-image)?</p>
------------------------	--	---

5) Risk Perceptions

Topic Focus	Core Question	Prompts & expansion materials
Risk taking	<p>To what extent do you think HIV/AIDS is a risk to young people of your age?</p> <p>Are young people more worried/concerned about pregnancy or HIV/AIDS and STIs?</p> <p>Do you think young people take the risks seriously?</p>	<p>Pregnancy</p> <p>HIV/AIDS</p> <p>STIs</p>

6) Condom use

Topic Focus	Core Question	Prompts & expansion materials
Condoms	<p>What do young people think about condoms?</p> <ul style="list-style-type: none"> — What are their advantages and disadvantages? — Should men/women carry them around? <p>Where do young men and women of your age generally obtain their condoms from?</p> <p>Some people say that they would rather not have sex than use a condom...</p> <ul style="list-style-type: none"> — What do you think women/men of your age think about that? <p>What do you think would make young people adopt “safer sex” practices e.g. using condoms?</p>	<p>Ease of obtaining condoms</p> <p>Barriers to obtaining condoms</p> <p>Differences between young men and women</p>

7) HIV Testing

Topic Focus	Core Question	Prompts & expansion materials
HIV status	How can one know with assurance if he/she is infected with HIV or not?	
Views about HIV testing	<p>What do young people of your age think about HIV testing?</p> <ul style="list-style-type: none"> — Its advantages and disadvantages — Should young people take HIV test? <p>Some people say it is better for them not to know their HIV status and die quietly...</p> <ul style="list-style-type: none"> — What do young people think about this? — What could make young people not want to know their HIV status? 	
Awareness of HIV Testing Centre	Please list all the places where young people can take HIV test	Health centres, organisations etc
Use of HIV testing centre	<p>Do young people visit those centres?</p> <p>Why do young people visit the centres?</p> <p>Is there anything that will prevent young people from visiting those centres?</p>	<p>Acceptability of young people</p> <p>Triggers/reasons for visiting the centres</p> <p>Barriers to attendance</p>

APPENDIX C: IN-DEPTH INTERVIEW GUIDE

Introduction

Good day. Thank you very much for participating in this study. My name is Toyin Aderemi. I am a PhD student of the University of KwaZulu-Natal, South Africa. I have obtained permission to carry out this study from the Oyo State Ministry of Education and your school authority.

The purpose of this interview is to explore your personal views, feelings and experiences about HIV/AIDS and sexual behaviour or sexual abstinence. You have been selected for this interview because you represent your peers/fellow students/friends.

Your responses will not be linked to your name to ensure anonymity and confidentiality. I will not discuss your responses with anybody else. However, personal information might be given to someone else who could help you if you tell me that you are being hurt by someone or hurting another person. In addition, such information might be released if required by law.

Please answer the questions as best as you can. You are free not to answer a question that you are not comfortable with. I am only interested in your personal opinions and experiences, and there are no right or wrong answers. Therefore, I want you to feel free to talk to me.

Please feel free to interrupt and ask for clarifications if you are unsure about a question.

I would further like to ask for your permission to tape record this interview.

1) HIV/AIDS Awareness

Topic Focus	Core Question	Prompts & expansion materials
AIDS awareness	Have you ever heard of AIDS?	What causes AIDS?
Difference between HIV and AIDS	What is the difference between HIV and AIDS?	What is HIV? What is AIDS?
AIDS signs & symptoms	How do you know someone has AIDS?	Have you ever seen anyone who has AIDS?

2) HIV Transmission

Topic Focus	Core Question	Prompts & expansion materials
HIV transmission routes	Tell me the ways one can get infected with HIV	In what other ways can a person get infected with HIV?

3) Sources of HIV Information

Topic Focus	Core Question	Prompts & expansion materials
Main sources of information	How have you found out about HIV/AIDS? How knowledgeable do you feel about HIV/AIDS?	Roles of parents, teachers, friends, siblings, relations, radio, TV, Please tell me what you were told/what you found out
Most frequently used and most important sources	Whom or what do you rely on for HIV/AIDS information? Whom or what are the most important sources? How important to you is each source?	Most influential sources parents, teachers, friends, siblings, relations, , media—radio, TV, magazines
Adequacy of information	How adequate do you think the information you obtained was?	What other things would you like to know about HIV/AIDS?

4) Sexual experience

Topic Focus	Core Question	Prompts & expansion materials
First sexual experience	<p>Have you ever had sex?</p> <p>How old were you and your partner when you first had sex?</p> <p>How long had you known him/her and in what ways?</p> <p>What made you have sex on that day?</p> <ul style="list-style-type: none"> — How did having sex make you feel that day? — Were you pressured into having sex? — By whom? — Did you receive/give a gift before or after having sex? — Did you tell anybody about your first sexual experience? If yes/no, why? 	<p>Roles of friends, partner</p> <p>Were you raped?</p>
Subsequent sexual experience	<ul style="list-style-type: none"> — Have you had sex again after your first experience? — Was it with the same partner? — When last did you have sex? — With whom did you have sex? 	

5) Condom Use

Topic Focus	Core Question	Prompts & expansion materials
Condom use	<p>How often do you use condom?</p> <p>Why do you use it? Why don't you use it?</p> <p style="padding-left: 40px;">— Advantages & disadvantages</p> <p>With whom do you use condom?</p> <p>Do you feel you are able to negotiate the use of condom?</p> <p>Is it easy/difficult? Why?</p>	<p>What informs your decision on when and whom to use condom with?</p>
Barriers to condom use	<p>From where do/did you obtain condoms? Whose responsibility is it to obtain condoms? What are the barriers to obtaining condoms? How are they overcome?</p>	

6) Risk Perceptions

Topic Focus	Core Question	Prompts & expansion materials
Sexual risk taking	<p>Are you fearful of pregnancy?</p> <p>Are you fearful of HIV?</p> <p>Are you fearful of STIs?</p>	<p>Do you consider yourself to be at risk of any of these? Why? Why not?</p> <p>Have you ever been pregnant /made a partner pregnant? What did you do? How did you feel? How did others feel? Has it changed your behaviour?</p> <p>How would you feel if you found out you were pregnant/had made a girl pregnant? What would you do? Why?</p> <p>Have you ever had STIs or symptoms? Have any of your partners had STIs or symptoms? What did you do? How did you feel? Has it changed your behaviour?</p>

7) Sexual Inexperience

Topic Focus	Core Question	Prompts & expansion materials
Sexual inexperience	<p>Why do you think you haven't had sex yet?</p> <p>Reason(s) why first intercourse has yet to occur</p>	<p>Do you feel ready? Why? Why not?</p> <p>Have you wanted to but not yet found the right partner? How do you go about selecting the right partner? What does the relationship have to be like?</p> <p>When will the time be right for you?</p> <p>Have you plans or expectations to engage in sex?</p>
	<p>Do you feel under pressure NOT to have sex?</p> <p>Have you ever felt any pressure(s) to experience first intercourse?</p>	<p>From whom? How does this make you feel?</p> <p>How have you resisted the pressure(s) to have sex?</p> <p>Do you use other techniques to please partner(s)?</p>
Expectations about the first time	<p>Can you describe to me what you would like the first time to be like?</p> <p>Do you plan to use condom?</p>	<p>With whom? Age? What stage in the relationship? Type of partner?</p>

8) HIV Testing

Topic Focus	Core Question	Prompts & expansion materials
HIV test	<p>Have you ever had an HIV test?</p> <p>Have any of your partners had an HIV test?</p> <p>Have you ever asked a partner to have a test?</p>	<p>If yes, why? If no, why?</p> <p>Explore circumstances under which a test would be taken</p>
Awareness of HIV Testing Centre	<p>Please list all the places where young people like you can take HIV test</p>	<p>Health centres, organisations, clubs etc</p> <p>How have you found out about the services? Family, friends, school etc</p> <p>Did school ever teach you about the services in your area?</p>
Use of HIV testing centre	<p>What would prevent young people like you from visiting those centres?</p>	<p>Barriers to attendance</p>

APPENDIX D: KEY INFORMANT INTERVIEW GUIDE FOR TEACHERS OF MAINSTREAM LEARNERS

Introduction

Good day. Thank you very much for participating in this study. My name is Toyin Aderemi. I am a PhD student of the University of KwaZulu-Natal, South Africa. I have obtained permission to carry out this study from the Oyo State Ministry of Education and your school authority.

The purpose of this interview is to explore your views and opinions about the risk of HIV/AIDS among your students, their sexual behaviour and efforts towards the provision of sex education and HIV/AIDS information for your students. You have been selected for this interview because you are in a good position to give first-hand information.

Your responses will not be linked to your name to ensure anonymity and confidentiality.

Please answer the questions as best as you can. I am only interested in your personal opinions and experiences, and there are no right or wrong answers.

Please feel free to interrupt and ask for clarifications, if you are unsure about a question.

I would further like to ask for your permission to tape record this interview.

PART I

RISK FOR HIV/AIDS: AWARENESS

1. Do you think that young people like your students might be at risk for HIV/AIDS?

No

If no, why?

Yes

If yes, why?

2. Do you think that young people are at greater risk for HIV/AIDS than adults?

No

If no, why?

Yes

If yes, why?

3. Do young people like your students feel they are at risk for HIV/AIDS?

No

If no, why?

Yes

If yes, why?

4. What other reasons make them feel they are at risk of HIV infection?

5. If your students feel that they are at risk, what types of help have they asked for?

6. Would you give me any information on approximately how many young people in your area

a. Have died from AIDS?

b. Are living with HIV or AIDS?

PART II

SEXUAL BEHAVIOURS OF MAINSTREAM LEARNERS

Would you share with me what you know about the sexual practices and/or sex-related practices of your students?

- Girlfriend/boyfriend relationships
- The proportion that is sexually active
- Age of sexual initiation
- Reasons they have sex
- Unwanted pregnancies
- Estimate age of sexual partners. How often do they have sex with older partners?
- Incidence of rape/sexual abuse
- Gender differences

PART III

TEACHING YOUNG PEOPLE ABOUT HIV/AIDS THROUGH SCHOOLS

1. In what ways has your school been involved in teaching your students about sexuality education and HIV/AIDS?

- Is this in the school curriculum?
- At which level/class does your school start to teach HIV/AIDS and sex education, and for how long?
- In which subjects are these issues being taught?
- How many hours are devoted to this kind of teaching in a week?
- What are the contents (topics) of sexuality education and HIV education being taught in your school?

- How comfortable and prepared are the teachers in giving such information to students in this school? Probe for reasons.

2. If your school is not involved, why?

Mark if any of these mentioned, write others mentioned that are not in the list and probe for additional information

- It is not in the school curriculum
- Other organisations are better able to handle it

If so, which organisation?

- do not think it is a significant problem for our students
- worry about making them even more promiscuous
- lack of resources and or money

3. What other reasons are responsible for your school not teaching these issues?

4. Which other school-related programmes in your area are reaching or trying to reach your students with HIV/AIDS prevention information?

5. Which HIV/AIDS experts and others from the government, Ministry of Health or local voluntary agencies have you asked to give HIV prevention information to your students?

- If you did not ask any, why?
- If you did ask, were they ready/willing to help?

— No

If no, what were the reasons they gave for not wanting to help young people like your students?

— Yes

If yes, what did they do for your students that were helpful?

PART IV

TEACHING YOUNG PEOPLE ABOUT HIV/AIDS THROUGH NON-SCHOOL PROGRAMMES

1. Which other organisations or groups had made efforts (without you asking them) to educate your students about HIV/AIDS, safe sex, sexually transmitted infections, drug usage and other HIV/AIDS-related topics?

- Non-governmental organisations
- Religious groups
- Ministries of Education/Health
- Non-religious associations etc

2a. What types of information were received?

b. How would you rate the amount of HIV/AIDS information reaching your students compared to that reaching the general population?

c. How would you rate the accuracy and or understanding of HIV/AIDS information reaching your students compared to that reaching the general population?

d. Please could you share with me what you like or don't like about such information that is reaching your students?

3. In what ways do you think large HIV/AIDS campaigns can reach your students better?

PART V

HELP AND SUPPORT FOR YOUNG PEOPLE INFECTED WITH HIV/AIDS

1. About how many of your students do you think know their HIV status?
2. What are the barriers your students may encounter in getting tested for HIV?
 - What are their experiences in this regards?
 - Could you share with me an example that you know about?
3. Sometimes young people are diagnosed with HIV/AIDS much later than adults, either because they do not recognize the symptoms, no one tells them about the symptoms, no AIDS clinic welcomes young people, or they are afraid and do not know much about HIV/AIDS. Can you share your experience in this regard with me?
4. Sometimes some people do not get good medical care like expensive drugs or hospitalization. I will like you to share your experience along this line when a young person is diagnosed with HIV/AIDS.
5. Because of stigma, there may be reluctance to come forward to ask for diagnosis and care. People are sometimes worried about word 'getting around'. What is your opinion regarding this?

APPENDIX E: KEY INFORMANT INTERVIEW GUIDE FOR TEACHERS OF LEARNERS WITH INTELLECTUAL IMPAIRMENT

Introduction

Good day. Thank you very much for participating in this study. My name is Toyin Aderemi. I am a PhD student of the University of KwaZulu-Natal, South Africa. I have obtained permission to carry out this study from the Oyo State Ministry of Education and your school authority.

The purpose of this interview is to explore your views and opinions about the risk of HIV/AIDS among your students, their sexual behaviour and efforts towards the provision of sex education and HIV/AIDS information for your students. You have been selected for this interview because you are in a good position to give first-hand information.

Your responses will not be linked to your name to ensure anonymity and confidentiality.

Please answer the questions as best as you can. I am only interested in your personal opinions and experiences, and there are no right or wrong answers.

Please feel free to interrupt and ask for clarifications, if you are unsure about a question.

I would further like to ask for your permission to tape record this interview.

PART I

RISK FOR HIV/AIDS: AWARENESS

1. Do you think that persons with disability might be at risk for HIV/AIDS?

No

If no, why?

Yes

If yes, why?

2. Do you think that the intellectually disabled (mentally retarded) might be at risk for HIV/AIDS?

No

If no, why?

Yes

If yes, why?

3. Do you think that disabled people are at greater risk for HIV/AIDS than non-disabled people?

No

If no, why?

Yes

If yes, why?

4. Do you think that the intellectually disabled (mentally retarded) are at a greater risk for HIV/AIDS than other persons with disability?

No

If no, why?

Yes

If yes, why?

5. Do the intellectually disabled feel they are at risk for HIV/AIDS?

No

If no, why?

Yes

If yes, why?

6. What other reasons make them feel they are at risk of HIV infection?

7. If your students feel that they are at risk, what types of help have they asked for?

8. Would you give me any information on approximately how many intellectually disabled in your area

c. Have died from AIDS?

d. Are living with HIV or AIDS?

PART II

SEXUAL BEHAVIOURS OF LEARNERS WITH INTELLECTUAL DISABILITY

Would you share with me what you know about the sexual practices and/or sex-related practices of your students?

- Girlfriend/boyfriend relationships
- The proportion that is sexually active
- Age of sexual initiation
- Reasons they have sex
- Age of sexual partners. How often do they have sex with older partners?
- Unwanted pregnancies
- Incidence of rape/sexual abuse
- Gender differences

PART III

TEACHING PERSONS WITH INTELLECTUAL DISABILITY ABOUT HIV/AIDS THROUGH SCHOOL & DISABILITY ORGANISATIONS

1. In what ways has your school been involved in teaching your students about sexuality education and HIV/AIDS?

- Is this in the school curriculum?
- At which level/class does your school start to teach HIV/AIDS and sex education, and for how long?
- In which subjects are these issues being taught?
- How many hours are devoted to this kind of teaching in a week?
- What are the contents (topics) of sexuality education and HIV education being taught in your school?
- How comfortable and prepared are the teachers in giving such information to students in this school? Probe for reasons.

2. If your school is not involved, why?

Mark if any of these mentioned, add those mentioned not in the list and probe for additional information

- It is not in the school curriculum
- Other organisations are better able to handle it

If so, which organisation?

- do not think it is a significant problem for our students
- worry about making them even more stigmatized
- lack of resources and or money

3. What other reasons are responsible for your school not teaching these issues?

4. Which other disability organisation in your area are reaching or trying to reach people with intellectual disabilities with HIV/AIDS prevention information?

5. Which HIV/AIDS experts and others from the government, Ministry of Health or local voluntary agencies have you asked to give HIV prevention information to your students?

- If you did not ask any, why?
- If you did ask, were they ready/willing to help?

— No

If no, what were the reasons they gave for not wanting to help the intellectually disabled?

— Yes

If yes, what did they do for the intellectually disabled that was helpful?

PART IV

TEACHING PERSONS WITH INTELLECTUAL DISABILITY ABOUT HIV/AIDS THROUGH NON-DISABILITY ORGANISATIONS

1. Which non-disability groups had made efforts (without you asking them) to educate your students about HIV/AIDS, safe sex, sexually transmitted infections, drug usage and other HIV/AIDS-related topics?

2a. Have you ever seen any of your students being reached by HIV prevention messages meant for the general population?

- No
- Yes

If yes, how many of your students do you think were reached?

-Few -Some -Most -All

If yes, what types of information were received?

b. How would you rate the amount of HIV/AIDS information reaching the disability community compared to that reaching the general population?

c. How would you rate the accuracy and or understanding of HIV/AIDS information reaching the disability community compared to that reaching the general population?

d. Please could you share with me what you like or don't like about such information that is reaching your students?

3. In what ways do you think large HIV/AIDS campaigns (by non-disability organisations) have been inaccessible to your students?

4. In what formats do you think non-disability organisations can make HIV/AIDS prevention messages more accessible to your students?

PART V

HELP AND SUPPORT FOR DISABLED PERSONS INFECTED WITH HIV/AIDS

1. About how many of your students do you think know their HIV status?
2. What are the barriers your students may encounter in getting tested for HIV?
 - What are their experiences in this regards?
 - Could you share with me an example that you know about?
3. Sometimes persons who are disabled are diagnosed with HIV/AIDS much later than non-disabled persons, either because they do not recognize the symptoms, no one tells them about the symptoms, no AIDS clinic welcomes disabled persons, or they are afraid and do not know much about HIV/AIDS. Can you share your experience in this regard with me?
4. Sometimes persons who are disabled do not get as good medical care as persons who are not disabled. This is particularly true when persons who are disabled need expensive drugs, or extra care or hospitalization. I will like you to share your experience along this line when someone with a disability is diagnosed with HIV/AIDS.
5. Because the disabled community is often small, there may be additional reluctance to come forward to ask for diagnosis and care. People are sometimes worried about word 'getting around'. What is your opinion regarding this?

Thank you for your time.

APPENDIX F: QUESTIONNAIRE

DEPARTMENT OF BEHAVIOURAL MEDICINE, UNIVERSITY OF KWAZULU-NATAL, DURBAN, SOUTH AFRICA

This research is towards a PhD degree. Please complete the questionnaire accurately and honestly. This questionnaire is being completed by students in many schools in Oyo State. No-one will know your individual answers. Please put a tick in the correct space

Questionnaire Number

Date

Name of School

Class.....

I. ABOUT YOU:

1. Age in years

2. Sex Male Female

3. Are you married? Yes No

4. What is your religion? Please tick one answer

Christianity Islam Other (please describe.....)

5. What language do you speak at home? Please tick one answer

English Ibo Yoruba Other (if other please describe.....)

6. With whom do you live? Please tick one answer

Mother and father Mother Father

Grandparents Grandmother Grandfather

Aunt or Uncle Other family members Friends

Hostel Other (If other please explain

7. What are your parents' occupations?

- a. Father.....
- b. Mother.....
- c. No parents.....

II. SEXUALITY Please tick one answer on each line

8. Do you have a boyfriend or a girlfriend, or not? Yes No

9. Have you ever had sex, or not? Yes No

(If no go to 25)

10. At what age did you start to have sex?

N/A

11. How old was your first partner?

My peer A bit older than me Much older than me N/A

12. Did you have sex within the past 6 months, or not? Yes No

13. How many partners did you have sex with in the past 6 months?
1 2 3 4 5-10 more than 10 /A

14. When last did you have sex?.....

15. When you last had sex did you use a condom, or not? Yes No don't remember

16. Do you intend to use condom the next time you have sex, or not? Yes No /A

Please tick one answer for each line

	Always	Often	Sometimes	Rarely
17. I use condom with my girlfriend/boyfriend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I use condom with someone I just met	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. When in a relationship I have sex with Someone else	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

III. STDS/STIs

20. Have you ever had a sexually transmitted disease (STD) / infection (STI), or not?

Yes No Don't know

21. How would you know if you have STI?.....

22. If yes (to STI), did you go for treatment, or not? Yes No

23. Have you ever had sex with someone when you did not want to (rape), or not? Yes No
If yes:

24. How old was the partner who had sex with you when you did not want (rape)?

My peer A bit older than me Much older than me

25. Do you want to use condom the first time you have sex? Yes No

IV. HIV/AIDS AWARENESS & TESTING

26. Have you ever heard of HIV/AIDS, or not? Yes No

27. From who or where did you hear about HIV/AIDS? Tick as many as apply to you

Parents	<input type="checkbox"/>	Brother/sister	<input type="checkbox"/>	Other relations	<input type="checkbox"/>	Friends	<input type="checkbox"/>
Radio	<input type="checkbox"/>	Television	<input type="checkbox"/>	Church/Mosque	<input type="checkbox"/>	Newspapers	<input type="checkbox"/>
Books	<input type="checkbox"/>	Magazines	<input type="checkbox"/>	Hospital/Clinic	<input type="checkbox"/>	Teacher	<input type="checkbox"/>
Non-Governmental Organizations	<input type="checkbox"/>	Others(specify)	<input type="checkbox"/>			

28. Have you ever been tested for HIV/AIDS, or not? Yes No don't know

V. SEXUAL ABSTINENCE *Please tick one answer for each line*

- | | Yes | Unsure | No |
|--|--------------------------|--------------------------|--------------------------|
| 29. Risk Perception | | | |
| a) I think I can get HIV/AIDS | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) I think I need to change my behaviour to avoid getting HIV/AIDS | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Boys/girls of my age can get HIV/AIDS | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- | | Yes | Unsure | No |
|---|--------------------------|--------------------------|--------------------------|
| 30. Attitude | | | |
| a) Sexual abstinence would prevent me from having STIs, including HIV/AIDS | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Sexual abstinence would prevent me from unwanted pregnancy/impregnating a girl | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Sexual abstinence is dangerous and unhealthy | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Having sex now shows that you are mature | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- | | Yes | Unsure | No |
|---|--------------------------|--------------------------|--------------------------|
| 31. Outcome Expectations | | | |
| a) Having sex now will mess up my future | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Having sex now will not affect my future goals | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) I could have STIs if I have sex | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) I could have HIV/AIDS if I have sex. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) I could become or make a girl pregnant if I have sex | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

32. Social Influences

- | | Yes | Unsure | No |
|---|--------------------------|--------------------------|--------------------------|
| a) My boyfriend/girlfriend would support us to have sex now | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) My father would support me to have sex now | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) My mother would support me to have sex now | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) My friends would support me to have sex now | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) My friends are not having sex | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) My brothers/sisters would support me to have sex now | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

33. Self-efficacy

- | | Yes | Unsure | No |
|---|--------------------------|--------------------------|--------------------------|
| a) I can firmly say “no” to sex | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) I can have a boyfriend/girlfriend for a long time without having sex | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) It is difficult to tell a lover that I don’t want to have sex | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

34. Intention

- | | Yes | Unsure | No |
|---|--------------------------|--------------------------|--------------------------|
| a) I will not have sex until I am married | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) I will not have sex until I am older | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

VI. HIV TRANSMISSION. *Please tick one answer for each line*

35. Do you think that if one of the partners is HIV positive that HIV can be transmitted through:

	YES	NO
a) Vaginal sex	<input type="checkbox"/>	<input type="checkbox"/>
b) Anal sex	<input type="checkbox"/>	<input type="checkbox"/>
c) Kissing	<input type="checkbox"/>	<input type="checkbox"/>

36. If the woman is HIV positive can HIV be transmitted from

	YES	NO
a) Pregnant woman to unborn baby?	<input type="checkbox"/>	<input type="checkbox"/>
b) Pregnant woman during delivery?	<input type="checkbox"/>	<input type="checkbox"/>
c) Breastfeeding mother to baby?	<input type="checkbox"/>	<input type="checkbox"/>

37. Can HIV be transmitted by:

	YES	NO
a) Using the same cup as HIV positive person?	<input type="checkbox"/>	<input type="checkbox"/>
b) Using the same toilet as an HIV positive person?	<input type="checkbox"/>	<input type="checkbox"/>
c) Contact with blood of an HIV infected person?	<input type="checkbox"/>	<input type="checkbox"/>

38. Do you know anyone who has HIV/AIDS, or not? Yes No

39. Yes Unsure No

I think that HIV/AIDS is a serious problem in our community.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

VII. SUBSTANCE USE

40. Do you use any of the following substances? Please tick one answer on each line.

Substance	I do not use this	I use this only occasionally	I use it daily	I use it during the week and weekends	I use it at weekends only
a) Cigarettes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Alcohol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Marijuana	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Other hard drugs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

THANK YOU FOR ANSWERING THIS QUESTIONNAIRE