

**SUBSTANCE USE AND RISKY SEXUAL BEHAVIOUR AMONG ADOLESCENTS AT  
A TERTIARY INSTITUTION AND THOSE WHO ARE NEITHER STUDYING NOR  
EMPLOYED IN PIETERMARITZBURG**

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Social Science (Clinical Psychology)* in the School of Applied Human Sciences,  
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## Table of Contents

Declaration: Anti-plagiarism.....	i
Acknowledgements.....	ii
Table of contents.....	iii
List of tables.....	vii
List of figures.....	viii
Acronyms.....	ix
Abstract.....	x
<b>Chapter One: Introduction.....</b>	<b>1</b>
1.1 Background to the research.....	1
1.2 Aims and rationale.....	2
1.3 Research objectives.....	3
1.4 Research questions.....	3
1.5 Hypothesis.....	4
1.6 Definition of concepts.....	4
1.7 Dissertation outline.....	5
<b>Chapter Two: Literature Review.....</b>	<b>6</b>
2.1 Introduction.....	6
2.2 Adolescent stage.....	6
2.2.1 Biological challenges.....	7
2.2.2 Social challenges.....	8
2.2.3 Psychological challenges.....	9
2.3 Adolescents' psychopathology.....	10
2.4 Challenges facing adolescents in South Africa.....	13
2.4.1 Youth unemployment.....	14
2.4.1.1 Lack of formal education.....	14
2.4.1.2 Labour market and skills mismatch.....	15
2.4.2 Growing up under impoverished conditions.....	17
2.5 Adolescents' risky sexual behaviour.....	18
2.6 Substance use and abuse among adolescents.....	21

2.7 Co-existence of substance use and risky sexual behaviour.....	27
2.8 Risk and protective factors associated with adolescents' involvement in substance use and risky sexual behaviour.....	29
2.8.1 Risk factors.....	29
2.8.1.1 Peer pressure.....	29
2.8.1.2 Intrapersonal psychological characteristics.....	30
2.8.1.3 Genetic predisposition.....	32
2.8.1.4 Familial and environmental factors.....	32
2.8.2 Protective factors.....	33
2.8.2.1 Individual level.....	33
2.8.2.2 Interpersonal level.....	34
2.8.2.3 Community and structural-societal levels.....	35
2.9 Help-seeking behaviour in adolescents.....	36
2.9.1 Stigma and discrimination.....	37
2.9.2 Lack of adolescents' mental health facilities.....	38
2.10 Theoretical Framework: Health Belief Model.....	39
2.10.1 Perceived susceptibility.....	40
2.10.2 Perceived severity.....	40
2.10.3 Perceived benefits.....	41
2.10.4 Perceived barriers.....	41
2.10.5 Cues for action.....	41
2.10.6 Self-efficacy.....	42
2.11. Chapter Conclusion.....	42
<b>Chapter Three: Methodology.....</b>	<b>44</b>
3.1 Introduction.....	44
3.2 Research design.....	44
3.3 Study population.....	46
3.4 Inclusion criteria.....	46
3.5 Sampling methods and study sample.....	46
3.6 Data collection.....	48
3.6.1 Data collection instrument.....	48
3.6.2 Administration procedure of questionnaire.....	49

3.7 Reliability and Validity.....	50
3.7.1 Reliability.....	50
3.7.2 Validity.....	51
3.7.3 Generalisability of Research Findings.....	52
3.7.4 Limitations of using questionnaire as data collection tool.....	52
3.8 Data analysis.....	53
3.8.1 Data analysis tool and statistical procedures.....	53
3.8.2 Comprehensive and detailed data analysis procedures.....	55
3.9 Ethical considerations.....	57
3.9.1 Voluntary participation and informed consent.....	57
3.9.2 Anonymity and confidentiality.....	57
3.9.3 No harm to participants.....	58
3.10 Chapter Conclusion.....	58
<b>Chapter Four: Results.....</b>	<b>59</b>
4.1 Introduction.....	59
4.2 Demographic profile of the sample.....	59
4.3 Cigarette smoking patterns.....	60
4.3.1 Prevalence of cigarette smoking.....	60
4.3.2 Age of onset for cigarette smoking.....	64
4.4 Alcohol consumption.....	65
4.4.1 Alcohol consumption patterns.....	65
4.4.2 Age of onset for alcohol consumption.....	70
4.5 Dagga smoking.....	71
4.5.1 Prevalence of dagga smoking.....	71
4.5.2 Age of onset for dagga smoking.....	74
4.6 Risky sexual behaviour.....	75
4.6.1 Patterns of engagement in sexual activities.....	75
4.6.2 Age of onset for sexual intercourse.....	80
4.7 Relationship between substance use and risky sexual behaviour.....	82
4.7.1 The use of any protection against pregnancy or diseases when engaging in sexual intercourse while intoxicated.....	84
4.8 Predictors of adolescents' risk taking behaviour.....	85

4.8.1 Predictors of adolescents' substance use.....	85
4.8.1.1 Predictors of cigarette smoking in adolescents.....	85
4.8.1.2 Predictors of alcohol use among adolescents.....	87
4.8.1.3 Predictors of dagga smoking in adolescents.....	88
4.8.2 Predictors of adolescents' risky sexual behaviour.....	89
4.8.2.1 Predictors of having known partner for more than seven days before sexual intercourse.....	89
4.8.2.2 Predictors of the use of protection during sexual intercourse.....	91
4.8.2.3 Predictors of having sexual intercourse while intoxicated.....	92
4.9 Chapter Conclusion.....	93
<b>Chapter Five: Discussion.....</b>	<b>95</b>
5.1 Introduction.....	95
5.2 Key findings of the study.....	96
5.2.1 Relationship between substance use and risky sexual behaviour among participants.....	96
5.3 Substance use.....	100
5.3.1 Cigarette smoking.....	100
5.3.2 Alcohol consumption.....	103
5.3.3 Dagga smoking.....	105
5.4 Adolescents' risky sexual behaviour.....	107
5.5 Summary of discussion.....	112
<b>Chapter Six: Conclusion.....</b>	<b>113</b>
6.1 Introduction.....	113
6.2 Summary of the results.....	113
6.3 Unique contribution of the study.....	116
6.4 Recommendations.....	117
6.5 Limitations of the study.....	118
6.6 Suggestions for future research.....	118
6.7 Conclusion.....	119
<b>References.....</b>	<b>122</b>

<b>APPENDICES.....</b>	<b>152</b>
Appendix A: Risk-taking behaviour questionnaire (adapted).....	152
Appendix B: Copy of ethical clearance certificate.....	156
Appendix C: Study information sheet.....	157
Appendix D: Informed consent form.....	158
Appendix E: Turn it in Report.....	159

### List of Tables

<b>Table 4.1</b>	Demographic profile of the sample.....	60
<b>Table 4.2</b>	Cigarette smoking patterns.....	61
<b>Table 4.3</b>	Have (never) smoked cigarette in past year.....	62
<b>Table 4.4</b>	Number of days smoked cigarette in the past month.....	63
<b>Table 4.5</b>	Age of onset for cigarette smoking.....	65
<b>Table 4.6</b>	Alcohol consumption patterns.....	66
<b>Table 4.7</b>	Used alcohol in past year.....	67
<b>Table 4.8</b>	Number of days in which alcohol was used in the past month.....	68
<b>Table 4.9</b>	Number of days of having more than five alcohol drinks in past 14 days.....	70
<b>Table 4.10</b>	Age of onset for alcohol use.....	71
<b>Table 4.11</b>	Dagga smoking patterns.....	72
<b>Table 4.12</b>	Number of days of dagga smoking in the past week.....	73
<b>Table 4.13</b>	Daily dagga smoking patterns.....	74
<b>Table 4.14</b>	Age of onset for dagga smoking.....	75
<b>Table 4.15</b>	Number of sexual partners in the past 12 months.....	77
<b>Table 4.16</b>	Frequency of sexual intercourse.....	78
<b>Table 4.17</b>	Known sexual partner for more than seven days before sexual intercourse and the use of protection while having sexual intercourse.....	80
<b>Table 4.18</b>	Age of onset for sexual intercourse.....	82
<b>Table 4.19</b>	Logistic regression predicting adolescents' cigarette smoking.....	87
<b>Table 4.20</b>	Logistic regression predicting adolescents' alcohol use.....	88
<b>Table 4.21</b>	Logistic regression predicting adolescents' dagga smoking.....	89
<b>Table 4.22</b>	Logistic regression predicting knowing a sexual partner for seven days before sexual intercourse.....	90



<b>Table 4.23</b>	Logistic regression predicting the use of protection during the last sexual intercourse.....	92
<b>Table 4.24</b>	Logistic regression predicting having sexual intercourse while intoxicated.....	93

### **List of Figures**

<b>Figure 4.1</b>	A graph showing sexual behaviour patterns.....	76
<b>Figure 4.2</b>	A graph depicting risky sexual behaviour trends.....	83
<b>Figure 4.3</b>	A graph showing the use of protection when having sexual intercourse while Intoxicated.....	85

## Acronyms

HIV/AIDS	Acquired Immune Deficiency Syndrome
HBM	Health Belief Model
SAMRC	South African Medical Research Council
UN	United Nations
WHO	World Health Organization
NIDA	National Institute on Drug Abuse

## **Abstract**

Using quantitative-cross sectional research design, this study investigated the relationship between substance use and risky sexual behaviour among adolescents studying at a tertiary institution and adolescents who are not studying and are also unemployed in Pietermaritzburg. It was hypothesized that adolescents who are neither studying nor employed would engage in substance use and risky sexual behaviour more than their student counterparts as a result of negotiating challenges brought by adolescent stage in face of socio-economic difficulties. Using convenience sampling method, a total of 400 (N) adolescents from both genders, who were within the age range of 18 and 21 were sampled, of the 400, 200 were first year adolescent students from University of KwaZulu Natal, Pietermaritzburg, while the other 200 were sampled from adolescents who are not studying and also not employed in Pietermaritzburg Central Business District (CBD), Imbali Township, Northdale and woodlands. A self-administered Risk-Taking Behaviour questionnaire was used as data collection tool. This study found that there were no significant differences between student adolescents and those who are neither studying nor employed in engagement in substance use and risky sexual behaviour. Alcohol was identified as the prime predictor of adolescents' involvement in risky sexual behaviour. Detailed results showed different patterns of engagement in risk-taking behaviours and how they relate to demographic factors. For example, significantly more males than females have smoked cigarettes and dagga; early age of dagga smoking onset was reported more by females than males. Results of this study highlight the complexity of adolescents' risk taking behaviours and their multifaceted etiological factors. In essence, findings of this study revealed that adolescents' substance use and risky sexual behaviour is a reality and they also confirmed that adolescent risk taking behaviour is prevalent and on the rise both locally and globally, regardless of socio-economic or historical background. This study also highlighted the plight of South African adolescents from previously disadvantaged communities who have to negotiate this stage in the face of socio-economic difficulties. More larger qualitative studies on this subject are recommended to document subjective experiences of adolescents' engagement in risky-behaviours.

## CHAPTER ONE

### Introduction

#### 1.1. Background to the Research

Adolescence is a developmental period between childhood and adulthood (Carr, 2005; Engler, 1999; Notole & Kheswa, 2014). This developmental stage is referred to as the period of "*storm and stress*" because people who are at this stage experience a variety of biological, social and psychological changes and challenges (Carr, 2004; Carr, 2005; Sigelman & Shaffer, 1995). It is of paramount importance to note that there are some adolescents who cope well with these challenges, while others fail to do so (Bennie, 2003; Kgole, 2004). Sigelman and Shaffer (1995) argue that some of the adolescents who fail to negotiate this period well end up being involved in risk-taking behaviours which pose a threat to their optimal development. This has also been confirmed by numerous studies (Bennie, 2003; Conrod, Stewart, Comeau & Maclean, 2006; Jefftha, 2006; Kgole, 2004).

Although afore-mentioned developmental challenges affect adolescents globally, there are other psychosocial challenges that face many South African adolescents. Currently, South Africa is characterised by challenges concerning poverty and unemployment (Mayosi, Flisher, Lallo, Sitas, Tollman & Bradshaw, 2009). As a result, South African adolescents find themselves battling with problems which are the end results of socio-economic difficulties (Steyn, Badenhorst & Kamper, 2010). In addition to poverty and unemployment, some South African adolescents have to bear the scourge of being infected and affected by HIV/AIDS (Booyesen & Summerton, 2002).

Growing-up under impoverished conditions contributes negatively to the developing adolescent (Machell, Disabato & Kashdan, 2016). Among other things, it may limit opportunities of attaining a better future as a result of limited education. For instance, a study by Holborn and Eddy (2011) documented that a third of 15-24 year olds are neither studying nor employed. According to Lam, Leibbrandt and Mlatsheni (2008), limited education has a detrimental effect on the employability of adolescents.

Du Toit (2003) argues that work is an essential source of livelihood and identity which provides people with a feeling of self-worth and self-esteem. It is possible that being

unemployed can affect an individual's self-esteem, especially of those adolescents who have not furthered their studies after finishing high school due to poverty. Studies report a high correlation between risk-taking behaviour and unemployment (Amoateng, Kalule-Sabiti & Arkaah, 2014; Jackson, 2005; Singh & Das, 2011).

Most of the studies about adolescents' risk-taking behaviours have been conducted among school going adolescents (Flisher, Ziervogel, Chalton, Leger & Robertsons, 1993; Keys, Rosenthal & Pitts, 2006; Kgole, 2004; Millman, Khuri & Hammond, 1981;) and among those who are attending tertiary institutions (Keys, Rosenthal & Pitts, 2006; Peltzer & Phaswana, 1999). Very few studies have been conducted on adolescents who are not in the education system and who are unemployed (South African Medical Council, 2008; Taylor, Jinabhai, Naidoo, Keinschmidt & Dlamini, 2009). This leaves these adolescents out of picture, which leaves a gap of knowledge that needs to be filled. More research needs to be conducted in this area, and the current study seeks to contribute towards closing the gap in this knowledge.

As a contribution to the body of knowledge about the relationship between substance use and risky sexual behaviour, this study will investigate the relationship between substance use and risky sexual behaviour among adolescents who are at tertiary institutions and those who are neither studying nor employed. A study conducted by Flisher et al. (1993) on school going adolescents, documented that the consequences of risk-taking behaviour among school going adolescents include infectious diseases, teenage pregnancy and psychopathology, to mention but a few. However, it is unknown if such trends are applicable to adolescents who are not in the education system.

## **1.2 Aims and Rationale**

This study aims to investigate substance use and risky sexual behaviour among adolescents who are at tertiary institutions and those that are neither studying nor employed. This study is premised upon the assumption that to be an unemployed adolescent who has completed high school education and is not studying or employed, comes with its own psychosocial and socio-economic challenges. These psychosocial and socio-economic challenges are likely to render an individual vulnerable to engagement in

risk-taking behaviours, especially substance use and risky sexual behaviour (Louw & Louw, 2007; Mohasoa, 2010).

It has been mentioned above that most of the studies on risk-taking behaviours have been conducted on school going and university going adolescents. Thus, little is known about risk-taking behaviours of adolescents who are not within the education system. This leaves a gap of knowledge regarding the involvement in substance use and risky sexual behaviour of adolescents who are currently not studying. The current study seeks to close this gap by comparing risk-taking behaviours of adolescents who are currently studying at tertiary institutions and those who are not studying and who are unemployed. Knowledge obtained from this study will assist a great deal in understanding patterns of substance use and risky sexual behaviour among these adolescents. This research will also assist in better informing interventions that are targeting adolescents. In particular, this studying will assist in raising awareness of the plight of adolescents who are currently not studying and who are unemployed.

### **1.3 Research Objectives**

The current study has the following objectives:

1. To investigate the prevalence of adolescents' involvement in risk-taking behaviours
2. To compare involvement in risk-taking behaviours of adolescents who are at tertiary institutions with those who are currently not studying and are unemployed
3. To investigate if there are gender differences in risk-taking behaviours

### **1.4 Research Questions**

1. What demographic factors are related to risk-taking behaviours among adolescents?
2. Are there differences in patterns of engagement in risk-taking behaviours between adolescents who are at tertiary institutions and those who are neither studying nor employed?
3. Is there a relationship between substance use and risky sexual behaviour among adolescents?

## 1.5 Hypothesis

It is hypothesized in this study that adolescents who are neither employed nor studying would engage in risk-taking behaviours (substance use and risky sexual behaviour) more than those who are at tertiary institutions. This is based on the assumption that those adolescents who are not studying and unemployed are subject to challenges that may render them more vulnerable to engagement in risk-taking behaviours (Mohasoa, 2010).

## 1.6 Definition of concepts

It is important to define concepts that are frequently used throughout this research, for the purpose of uniform understanding, as they may be defined differently.

- **Adolescence:** refers to the transitional period between childhood and adulthood (Carr, 2005; Engler, 1999; Kgole, 2004; Notole & Kheswa, 2014). Some authors define it as a period between the ages of twelve and eighteen (Engler, 1999; Sigelman & Shaffer, 1995). However, there are those authors who extend this stage to age twenty-one (Bhana & Peterson, 2009; Millman, Khuri & Hammond, 1981). For the purpose of the present study, the latter definition will be adopted and adolescence will be regarded as the developmental stage between the ages of twelve and twenty-one.
- **Substance Use:** refers to the ingestion of any psychoactive drug which causes intoxication in one way or another (Barlow & Durrand, 2005; Sigelman & Shaffer, 1999). There are various types of such drugs such as cocaine, heroin, alcohol, marijuana (dagga) and others. However, only substances such as alcohol, marijuana (dagga) and cigarettes will be dealt with since they are commonly used by adolescents (Bennie, 2003; Millman et al., 1981) and are, in most cases, readily available to them (Peltzer & Phaswana, 1999).
- **Risk-Taking Behaviour:** refers to an engagement in any behaviour that contains an element of risk (Saxena & Puri, 2013) or a probability of experiencing harm (Bennie, 2003; Kgole, 2004; Pithey & Morejele, 2002). However, for the purpose of the present study, risk-taking behaviour will be limited to substance use and risky sexual behaviours, unless otherwise specified.

## **1.7 Dissertation Outline**

Chapter one introduces and discusses the background of the study with the aim of highlighting challenges that are faced by adolescents. It gives a brief synopsis of the problems faced by adolescents in the contemporary South African context. Chapter one also states the aims and the rationale of the current study. The chapter states the research objectives and the key questions which the research seeks to address. In addition, chapter one also provides the hypothesis of the research as well as definitions of key concepts. Chapter two presents a literature review that is relevant to the current study. It also addresses the research problem and highlights the gap of knowledge in previous studies. The theoretical framework, Health Belief Model (HBM), which informs the current study is also presented in chapter two. The research methodology which encompasses the research design, the sampling techniques used to select research participants, and the tools and methods that are used in analysing data will be presented in chapter three. The results of the study will be presented in chapter four. Chapter five discusses results of the current study in relation to relevant literature and theoretical framework. Finally, chapter six will serve as a conclusion chapter of this study. The conclusion will provide summary of significant findings, a unique contribution of the current study to studying adolescent risk-taking behaviours, recommendations, limitations of the study and lastly, suggestions for future research.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

In this chapter, the literature review will begin with a discussion of adolescence. Biological, psychological and social issues embedded in this stage will be discussed. A brief discussion of adolescents' psychopathology will then follow. This will be followed by the discussion of challenges facing adolescents in South Africa, with special focus on unemployment and poverty. Adolescents' risk-taking behaviours, with a particular emphasis on substance use and risky sexual behaviour will follow thereafter. Risk and protective factors of adolescents' involvement in risk-taking behaviours will be outlined. Adolescents' help-seeking behaviour will also be discussed, focusing on barriers to help-seeking. Lastly, the Health Belief Model will be outlined as the theoretical framework which informs the current study.

#### **2.2. Adolescent Stage**

The term adolescence is derived from a Latin verb, *adolescere*, which means to grow in maturity (Langa, 2012; Marshall, 2014). Across almost all societies, adolescence is characterised by developmental transitions which are accompanied by biological, social and psychological changes and challenges (Bhana & Peterson, 2009; Carr, 2002; Notole & Kheswa, 2014; Sigelman & Shaffer, 1995). This is the period which is also characterised by moving away from parental dependency to autonomy. Identity formation is one of the fundamental psychosocial tasks during adolescence (Schwartz, Zamboanga, Luyckx, Meca & Ritchie, 2013). If they fail to develop and integrate a stable self-identity, they may experience confusion over who they are. Identity confusion during the adolescent stage has been linked to the development of psychosocial challenges and also engagement in risk-taking behaviours (Schwartz et al., 2013). It is imperative to note that, despite the challenges, the majority of adolescents cope successfully with the demands of biological, socio-emotional and psychological development during this period (Cicchetti & Rogosch, 2002). What follows is a discussion of the biological, social and psychological challenges that adolescents encounter during this period.

### **2.2.1 Biological challenges.**

Biologically, this stage is characterised by changes that are associated with reaching puberty (Notole & Kheswa, 2014). Puberty is defined as a period of rapid physical maturation involving bodily and hormonal changes that happen during the onset of the adolescent stage (Papalia, Olds & Feldman, 2009). During this period, boys experience heightened secretion of testosterone (male hormone) which contribute to their manliness, and girls experience heightened secretion of oestrogen (female hormone). These hormones in turn contribute to the developing adolescent's rapid physical and biological maturation (Notole & Kheswa, 2014). In male adolescents the voice deepens, genitals become larger, pubic hair develops and they begin to experience nocturnal emissions (wet dreams) as a sign that they can produce offspring should they engage in unprotected sexual intercourse with females (Louw & Louw, 2007; Weiten, 2013). The signs of reaching puberty for girls include development of pubic hair, breasts and larger hips; they also experience their first menstrual cycle. The onset of menstruation highlights the fact that adolescent girls now have the ability to conceive should they engage in unprotected sexual encounters (Kgole, 2003).

Further, Collado-Rodriquez, MacPherson, Kurdziel, Rosenberg and Lejuez, (2015) state that some hormonal changes associated with puberty may expose adolescents to risk-taking behaviours. This is because some of these changes are often associated with an elevated affective tendency towards sensation-seeking, emotional arousal and risk-taking (Arnett, 1992; Dahl & Spear, 2004). Advances in neurobiological research have shown that these changes are implicated in behaviours, such as aggression, sexuality and mood swings during the adolescent period (McNeely & Blanchard, 2009). For instance, testosterone has been correlated with risk-taking behaviour, especially in male adolescents (Booth, Johnson, Granger, Crouter & McHalle, 2003). The effects of androgen, oestrogen and testosterone on the sexual behaviour of adolescents have been found to work directly on motivation for sexuality, libido, and possibly also personality (Booth et al., 2003; Sales & Irwin, 2013). Because of their influence on heightened sexual arousal, they have been found to contribute to the risk of contracting sexually transmitted diseases and of experiencing unplanned pregnancy (Doyle, Mavedzenge, Plummer & Ross, 2012). Thus, if these hormonal

changes associated with puberty are not well negotiated they may give rise to the development of risk-taking behaviours, such as substance use and risky sexual behaviour.

### **2.2.2 Social challenges.**

Socially, adolescents have to deal with challenges that are associated with the transition to new roles in society and being involved in interpersonal relationships (Langa, 2012). During this period, adolescents shift their interpersonal focus from parents to peers (Granic, Dishion & Hollstein, 2006). Peer relationships play a major role in the development of individuality and emerging emotional independence. At times these relationships effect influences that are not in line with familial values (Bhana & Peterson, 2009; Langa, 2012). Adolescents' attempts to balance familial expectations and peers' influences may lead to some tension between themselves and their parents. In addition, adolescence is often the time in which there is a gradual movement from involvement with groups of the same sex to mixed sex groups and the possibility of intimate or sexual relationships (Edmonds & Wilcocks, 2000). An involvement in intimate relationships during adolescence may be beneficial in the development of stable adult sexual and romantic identities if managed well (Wildsmith, Barry, Manlove & Vaughn, 2013). Nevertheless, it is important to emphasize that some intimate relationships have the potential to propel adolescents to engage in risky sexual behaviour (Wildsmith, Barry, Manlove & Vaughn, 2013). These are discussed in the section about risk factors to adolescents' risk taking behaviours.

During adolescence, individuals develop their own personal and social identities (Schwartz et al., 2013). Questions such as - who am I? What I am doing with my life? - come up most frequently and intensely during adolescence and early adult years (Zarrett & Eccles, 2006). Failure to develop stable identities and to find a niche among peers during this stage may lay a foundation for other psychological complications later in life. Some studies of identity formation have proposed that engagement in risk-taking behaviours may be reflective of maladaptive social or personal identity constellation (Schwartz et al., 2013). Difficulties in maintaining healthy interpersonal relationships are associated with psychological distress in adolescents, and may propel them to engage in risk-taking behaviours as a means of warding off distress and boredom (Schwartz, Beyers et al., 2011).

Thus, the development of stable identities and meaningful interpersonal relationships during adolescence, are fundamental psychosocial tasks, of which failure to develop may lead to psychological complications, including engagement in risk-taking behaviours.

### **2.2.3 Psychological challenges.**

Psychologically, at a cognitive level, adolescence is marked by significant developmental maturation. Focusing on Jean Piaget's theory of adolescents' cognitive development, during adolescence there is a shift from concrete ways of problem solving, to more abstract, systematic and flexible problem solving methods (Kuhn, 2006; Piaget, 1954). Adolescence also brings about more hypothetical thinking and logical reasoning that somehow guide actions and decisions (Kuhn, 2006). Marked improved cognitive capabilities in learning, knowledge acquisition and information processing have also been observed in people who are at this stage (Gouws, Kruger & Burger, 2010; Kuhn, 2006).

Although adolescents possess significant cognitive capabilities, Kuhn (2006) argues that they are still subject to increased susceptibility to certain decision-making errors. For instance, research shows that adolescents pay more attention to immediate gratification and are also strongly focused on rewards rather than the associated costs of their decisions and behaviours (Reiner, Murphy, Lin, Bartolome & Wood, 2016). This is as a result of slowly maturing cognitive control-related mechanisms during this stage (Burnett, Bault, Coricelli & Blackmore, 2010). The cognitive-control system, which mainly consists of outer regions of the brain, such as the prefrontal and parietal cortices, and portions of the anterior cortex, are slow maturing systems (Steinberg, 2007). This makes adolescents vulnerable to risk-taking behaviours because the cognitive-control system is involved in executive functions such as planning, thinking ahead, impulse control, and self-regulation, which are all essential in modifying behaviour, especially when it comes to risk taking behaviour (Steinberg, 2007).

By contrast, the limbic system, which controls reward processing, appetite, and sensation seeking, develops earlier in adolescence than do the prefrontal and parietal cortices (Casey, Getz & Galvan, 2008). This may render them vulnerable to making miscalculated decisions that have unintended consequences (Reiner et al., 2016). For instance, adolescents may engage in unsafe sexual intercourse, without calculating the

risks involved, due to perceived reward of sexual pleasure and satisfaction as opposed to protection against unplanned pregnancy and STDs.

Moreover, it has been stated above that during adolescence the body undergoes a myriad of physical changes in both male and female adolescents, for example, rapid growth spurt, weight gain, enlargement of sexual organs, pubic hair and breast development. Hence many, if not all, adolescents experience heightened preoccupations with body image and an increased awareness of sexuality (Savi-Cakar & Savi-Karayol, 2015; Sigelman & Rider, 2006). Studies infer that dramatic changes in body shape and weight can cause a great deal of psychological turmoil among adolescents (Alonso, Rodriguez, Alonso, Carretaro & Martin, 2005; Savi-Cakar & Savi-Karayol, 2015). For instance, if not addressed they may lead to the development of eating disturbances or disorders, poor body image, diminished self-worth and low self-esteem (Alonso et al., 2005). Diminished self-worth, poor body image and low self-esteem in adolescents are associated with scholastic difficulties, risky sexual behaviour, substance use, low levels of general wellbeing, aggression and a depressed mood (Meggert, 2004; Savi-Cakar & Savi-Karayol, 2015).

It is evident from the section above that adolescents experience a variety of biological, social and psychological changes and challenges. Failure to negotiate some of the challenges may lay a foundation for psychological disturbances, such as risk-taking behaviours, to develop. For an example, failure to contain hormonal changes, coupled with slow maturation of the cognitive control mechanisms in the brain and early development of the limbic system which is responsible for sensation seeking and reward processing, may render adolescents vulnerable to engagement in risk-taking behaviours. Likewise, heightened preoccupations with body image and sexuality may be precursors to severe psychopathology such as eating disorders and a depressed mood. In order to gain more insight into adolescents' psychopathology, it is discussed in the next section.

### **2.3 Adolescents' Psychopathology**

It is apparent that failing to deal with changes and challenges of adolescence may lead to psychological problems (Alonso et al., 2005; Storr, Pacek & Martins, 2012). Given the volatility of this stage, it comes as no surprise that approximately half of mental health and

substance related problems start between the ages of 14 and 15 years (Paruk & Karim, 2016). Globally, mental health problems are estimated to affect 10-25% of adolescents, yet only a small number of those who need psychological treatment actually receive it (Kielig, Baker-Henningham & Belfer, 2011; Murphey, Vaughn & Barry, 2013). A recent meta-analysis of epidemiological studies of child and adolescent mental health in Sub-Saharan Africa showed that prevalence rates of psychological problems, including substance abuse in children and adolescents are around 20% (Cortina, Sodha, Fazel & Ramchandani, 2012). In South Africa, about 15-20% of adolescents have a diagnosable mental health problem (Kleintjes, Flisher, Fick, Railoun, Lund, Moltano & Robertson, 2006; Flisher & Gevers, 2010). Adolescents' psychopathology is associated with negative outcomes in adulthood, such as psychosocial maladjustment, suicide, chronic substance abuse, risky sexual behaviour, poor academic and employment prospects (Agardh, Cantor-Graae & Ostergen, 2012; Da Costa, 2008).

The aetiology of adolescent psychopathology is multifactorial. It comprises of biological and psychosocial factors (Paruk & Karim, 2016). Biological factors include, among others, factors such as genetic predisposition, prenatal exposure to toxic substances and trauma. Psychosocial factors include abuse, neglect, bereavement, family conflict, stressful life events. In stressing the important role played by environmental factors in mental illness, Burns (2011) asserts that the risk of acquiring mental illness becomes greater in environments characterised by socio-economic inequalities and poor social support. Storr et al. (2012) argue that the most common framework of studying adolescents' psychopathology is the internalising and externalising model. Internalisation is the propensity to express psychological distress inwardly. The common internalising disorders in adolescents are dysthymia, eating disorders, major depressive disorder and anxiety. Externalisation on the other hand refers to the propensity to express psychological distress outwardly. Conduct disorder, ADHD and substance use disorder fall within externalising disorders that are diagnosed mostly in adolescents (Storr et al. 2012).

Epidemiological studies demonstrate comorbidity between externalising disorders and substance use disorders. About 70% to 80% of adolescents seeking treatment for substance abuse, have one or more comorbid disorder (Kaminer & Bukstein, 2007). Epidemiological studies also demonstrate a positive correlation between depressive

symptoms, substance use and risky sexual behaviour (Morojele, Parry & Brook, 2009; Agardh et al., 2012; Shier, Harris, Sternberg & Beardslee, 2001). For instance, results from a longitudinal research in the United States of America reported an association between depressive symptoms and inconsistent condom use among high school boys (Shier et al., 2001). Another study conducted by Agardh et al. (2012) on Ugandan university going adolescents, associated high scores on depressive symptoms with a large number of concurrent sexual partners among male and female participants. It is imperative to note that diagnosis for depression in adolescents may be missed, as they may present with antisocial or oppositional behaviour symptoms, substance use and risky sexual behaviour, instead of presenting with observable depressive signs and symptoms (Paruk & Karim, 2016).

Furthermore, with regard to the prevalence rates of mental disorders in South African adolescents, Kleintjes et al. (2006) argue that there is a lack of accurate national records and statistics. However, in a study of 15-19-year-old adolescents in five global cities, female adolescents from Johannesburg reported the highest depressive symptoms (44.6%) and also the highest post-traumatic stress disorder symptoms (67%), compared to their peers from different cities of the world (Cheng, XianChen, Chaohua et al., 2014). In their study of the prevalence of mental disorders among children, adolescents and adults in the Western Cape, Kleintjes et al. (2006) reported 17% over all prevalence rate of mental disorders for children and adolescents. In the same study, the most common disorders in adolescents were generalised anxiety disorder (11%), post-traumatic stress disorder (8%), major depressive disorder or dysthymia (8%), oppositional defiant disorder (6%) and conduct disorder (6%) (Kleintjes, 2006).

The prevalence of maladaptive behaviours, such as suicidal behaviour, in South African adolescents highlights the fact that mental health problems are a reality (Reddy, James, Sewpaul, Koopman, Funani, & Sifunda, 2010; Schlebusch, 2012). According to Alonso-Betancourt (2012) 90% of suicide cases are associated with psychopathology, especially depressive symptoms, substance abuse and schizophrenia. Paruk and Karim (2016) add that anxiety-, mood-, trauma and stressor related disorders, which are common in adolescents, are all associated with suicide risk. Globally, suicide remains the second leading cause of mortality among young people (Paruk & Karim, 2016). Recent suicide

statistics show that in South Africa 9.5% of all adolescent deaths are attributed to suicide (Schlebusch, 2012).

According to Reddy et al. (2010) in South Africa, 21.4% of adolescents have attempted suicide once or more in the previous six months. The recent South African National Youth Risk Behaviour Survey (YRBS) reported that 18% of South African adolescents have experienced suicidal ideations, another 18% had attempted suicide and 32% of those who have attempted suicide required medical attention (Reddy et al., 2010). However, some authors argue that suicide statistics may not be the true reflection of the magnitude of the problem because some families and communities still perceive suicide as taboo, and there are also inaccuracies in record keeping as well as under reporting (Alonso-Betancourt, 2012; Mhlongo & Peltzer, 1999). This ultimately leads to inaccurate statistics and paints an unclear picture of the suicidal behaviour of adolescents.

In summing up the above section on adolescents' psychopathology, it is imperative to note that almost half of adulthood substance use and other mental disorders begin during this stage. Given the volatility of adolescence, mental disorders are usually comorbid with other disorders. This is evident in the association of externalising disorders with substance abuse, and also the positive relationship between depressive symptoms, risky sexual behaviour and substance use. Burns (2011) stresses the vital role played by environmental factors in exacerbating the risk of acquiring adolescent psychopathology, especially when the environment is characterised by socio-economic deprivation and dire psychosocial stressors. This highlights the fact that adolescents, especially those from poor socio-economic backgrounds, not only have to negotiate challenges brought about by adolescence, they also have to deal with psychosocial problems emanating from environmental conditions. Challenges faced by South African adolescents are discussed in the next section.

## **2.4 Challenges Facing Adolescents in South Africa**

Apart from biological, psychological and social impediments faced by adolescents, there are other forms of socio-economic challenges that are faced by South African adolescents, particularly those from impoverished communities (Steyn, Bardenhorst &



Kamper, 2010). Adolescents from these communities find themselves trapped in structural challenges such as poverty and unemployment (Cloete, 2015). Both poverty and unemployment have been found to contribute to adolescents' engagement in substance use and risky-sexual behaviour (Jackson, 2005; Lambani, 2015). These challenges are presented below since they contribute to adolescents' risk-taking behaviours. Presenting such challenges in this study will contribute to gaining a better understanding of the plight of negotiating demands of adolescence in the face of poverty and unemployment.

#### **2.4.1 Youth unemployment.**

Youth unemployment is one of the major challenges that are currently facing developing countries (Altman, 2007; Verick, 2011). Globally, young people between the ages of 15 and 24 years are three times more likely to be unemployed compared to adults (Altman, 2007). In South Africa, according to quarterly labour force survey conducted by Statistics South Africa (2013), among the 2.4 million of the unemployed population, 52% are between the ages of 15-24 years. Black young people are the mostly affected since they make up 60% of the above-mentioned figures (Statistics South Africa, 2013). The Holborn and Eddy (2011) adds that black South African females who are between the ages of 15-24 have the highest rate of unemployment (63%) compared to their male counterparts. There are various factors that can be cited as reasons behind the plight of youth unemployment. According to Lam, Leibbrandt and Mlatsheni (2008) lack of formal education among youth and labour market and skills mismatch are the two factors that contribute to adolescents' unemployment. These factors, as well as the negative psychological impact they have on unemployed adolescents' psychological wellbeing, are going to be discussed briefly below.

##### **2.4.1.1 Lack of formal education.**

Educational attainment is often regarded as a predictor of finding better life chances and employment (Burns, Edwards & Pauw, 2010; Burns & Keswell, 2011). However, there are studies showing that a large number of adolescents drop out of high school before completing matric (Hallman & Grant, 2004; Statistics South Africa, 2015; Yu, 2012). For an example, Holborn and Eddy (2011) reported that a third of 15-24 year olds lack formal education due to reasons varying from dropping out of school and not studying further after completing matric. Another study by Statistics South Africa (2015) indicates that 55% of young South Africans who are looking for employment have education levels below matric,

and 36.4% have only matric. This makes it difficult for them to compete in the labour market. Yu (2012) adds that “an incomplete secondary school education is simply not enough to guarantee employment” (p. 27). There are various reasons that may be cited as causing the lack of formal education among adolescents and young adults in South Africa. Zoch (2013) indicates that parental socio-economic status is among the primary predictors of a child's educational outcome and labour market prospects.

Children from poor socio-economic backgrounds have been found to have limited educational and career opportunities compared to their affluent counterparts (Burns & Keswell, 2011). A study by The World Bank (2012), observing inequality of opportunity among children in South Africa, documented that the probability of reaching matric by the age of 19 or 20 years for those children from poor socio-economic backgrounds was 17% compared to 88% for children from affluent households. In the same study, the likelihood of reaching tertiary level was indicated to be 1% for those children from poor socio-economic backgrounds and 50% for those from affluent backgrounds (World Bank, 2012). This clearly shows how important is the role played by the socio-economic status of parents to children's education, which also determines their employment prospects.

#### **2.4.1.2 Labour market and skills mismatch.**

Lack of necessary skills which the modern South African economy demands among young South African labour force, is one of the main causes of the high rate of unemployment in South Africa (National Planning Commission, 2011). Economic growth in South Africa has occurred largely in skills-intensive sectors, such as engineering, the medical sciences, and financial services and this leaves those who are unskilled in a disadvantageous position which fuels joblessness (Hausmann, 2008; Yu, 2012). Different authors have stressed the fact that holding a tertiary qualification does not on its own guarantee employment (Du Toit, 2003; Yu, 2012). Yu (2012) adds that South African adolescents who, after completing matric, pursue degrees in the humanities and arts related fields often find it difficult to secure employment. In the South African labour market, there is an oversupply of graduates who hold degrees in arts-related fields (Du Toit, 2003). As a result, such graduates are not in demand in the labour market. According to Yu (2012), there is a shortage of graduates in fields such as engineering and medical sciences, and they are highly demanded by prospective employers. The mismatch in what is demanded

by the South African economy and the available skills among the young population clearly plays a pivotal role in increasing unemployment even when one holds a qualification. The situation becomes even more difficult for those who hold a matric certificate only (Burns & Keswell, 2011). According to Winefield (1993) because of structural changes in the South African economy, particularly the move from labour-intensive means of production to capital-intensive means of production, the prospects of securing jobs that do not require some tertiary qualification may well continue to decline. This is problematic because, according to Statistics South Africa (2015) 36,4% of people who are between the ages of 15-24 years who are looking for employment have only a matric certificate. This limits their chances of being employed in an already challenging labour market.

Furthermore, Du Toit (2003) states that work is an essential source of livelihood and identity: it provides people with feelings of self-esteem and self-worth. Unemployment is thus considered to be one of stress evoking life events, (Kapuvari, 2011; Westman, Etzion & Horovitz, 2004), and may be associated with factors responsible for the development of psychopathology (Funk, Drew & Knapp, 2012). Results of a meta-analytic investigation of 87 longitudinal and 237 cross-sectional studies in Europe, found evidence that unemployment is associated with depressive symptoms, anxiety, psychosomatic complaints, diminished self-esteem and low subjective well-being (Paul & Moser, 2009).

There is also evidence that unemployment may also render an individual vulnerable to engaging in self-destructive behaviour, such as suicidal ideations and substance abuse, to mention but a few (Extremera & Rey, 2016; Mohasoa, 2010; Rocha-Silva, 1997). For instance, in a study by Rocha-Silva (1997) on South African adolescents, it was discovered that they engage in risk-taking behaviours to deal with stressful life events, such as being unemployed. These findings were corroborated by Mohasoa (2010). When interviewing South African male adolescents, Mohasoa (2010) discovered that they engaged in substance use as a result of being overwhelmed by psychosocial and socio-economic problems, such as being unemployed.

It is evident from the above section that unemployment is one of the biggest challenges that face adolescents. It is also evident that there is a lack formal education and the necessary skills to meet the demand of the labour market in South Africa, are

among prime factors behind unemployment. Unemployment leads to poverty and this may lead adolescents to abuse substances as means of escaping misery and sorrow (Bengs, 2009; Jackson, 2005; Mohasoa, 2010). The impact of poverty on adolescents will be discussed in the subsequent section.

#### **2.4.2 Growing up under impoverished conditions.**

Growing up in poverty-stricken South African communities, on top of challenges brought by adolescence, adds more challenges to them (Sawyer, Afifi, Bearinger, Blakemore, Dick, Ezeh & Patton, 2012; Steyn et al., 2010). Growing up in poverty on its own may affect one's prospects of attaining a better education (Cluver, Boyes, Orkin & Sherr, 2013) due to financial constraints. Studies have also documented that there is a correlation between poverty, self-esteem and self-worth (Steyn et al., 2010). Adolescents from poverty stricken households and communities may find themselves engaging in risk-taking behaviours as a consequence of diminished self-esteem and self-worth as a result of being poor (Bengs, 2009).

Furthermore, household income is known to be an important factor affecting adolescents' sexual behaviour (Amoateng, Kalule-Sabiti & Arkaah, 2014). Some female adolescents who are from impoverished communities may end up engaging in transactional sexual intercourse in an attempt to attain a livelihood and meet the demands of growing up. A national household HIV survey conducted by the Human Science Research Council in 2008 showed evidence that younger girls engage in sexual relationships for material and monetary gains (Shisana et al., 2009). More evidence shows that some adolescent girls from impoverished backgrounds date older men, referred to as 'sugar daddies', to cater for their financial needs. Relationship with these men is often characterised by gender inequity and powerlessness (Luke & Kurz, 2002). These young girls often assume submissive positions in such relationships (Bhana & Petersen, 2009; Jewkes, Nduna, Shai & Dunkle, 2012). Their submissiveness and financial dependence may render them vulnerable to exploitation (Amoateng et al., 2014). This may result in unplanned pregnancy and infectious diseases as these older sexual partners are less likely to use condoms (Jewkes, Nduna, Shai & Dunkle, 2012).

When it comes to males, masculinity studies have shown that being poor may negatively affect an individual's sense of being a man (Mahasoa, 2010). Masculinity is often associated with power, wealth and success (Lindegger & Quayle, 2009). Adolescent boys from impoverished backgrounds may experience a sense of inferiority, powerlessness and hopelessness. This could make them susceptible to engaging in risky activities as a way of showing that they are 'real men'. For instance, they may display violent behaviour in an attempt to show their prowess. They may also partake in criminal activities in their attempt to attain financial stability, which may lead to imprisonment, injuries or death (Rich, Nkosi & Morojele, 2015).

## **2.5 Adolescents' Risky Sexual Behaviour**

Sexual exploration is considered by Chick and Reyna (2012) as a normal and healthy part of adolescents' development. While on one hand it may be considered as a normal part of adolescent development, it can, on the other hand, be a precursor to engagement in risky sexual behaviour. Adolescents are regarded as a vulnerable group when it comes to engagement in risky sexual behaviour (Mason-Jones, Crisp, Mathews & Dhansay, 2012). There are a number of studies that have highlighted adolescents' involvement in risky sexual behaviour (Awotibe, Phillips, & Lens, 2014; Brook et al., 2006; Eaton, Flisher & Aaro, 2003; Peltzer, 2010; Shisana et al., 2009).

Risky sexual behaviours such as inconsistent condom use, early onset of sexual intercourse and multiple concurrent sexual partners have been reported in studies on adolescents' risky sexual behaviour (Morojele et al., 2009; Zhao, Kim & Peltzer, 2016). Involvement in such behaviours has been linked to unplanned pregnancy, contraction of sexually transmitted diseases and HIV/AIDS (Flisher et al., 1993). Adolescent pregnancy is a significant concern because it is associated with school dropout, inadequate prenatal care, premature birth and also child abuse (Kearney & Levine, 2012). Complications of pregnancy are also counted among leading causes of mortality among female adolescents between the ages 15-19 years in developing countries (Thobejane, 2015).

A large number of adolescents and young adults between the ages of 15 years and 25 years in Sub-Saharan Africa are increasingly sexually active and are at risk of contracting

sexually transmitted infections (Awotibe et al., 2014). Globally, about 100 million new sexually transmitted infection cases are recorded each year (Gebretsadik & Babbel, 2014). About half of those cases are recorded in persons between the ages of 15 to 24 (Gebretsadik & Babbel, 2014). The high rate of sexually transmitted infections among adolescents indicates that some adolescents are inconsistent condom users. To illustrate the magnitude of the problem, the *National Youth Lifestyle Study* conducted in South Africa by Centre for Justice and Crime Prevention (2008) discovered that only 38% of sexually active adolescents are consistent condom users. This suggests that more than 60% of those adolescents who are inconsistent condom users are exposed to the possibility of contracting serious chronic conditions such as HIV/AIDS. Bhana and Petersen (2009) postulate that globally, youth accounts for 45% of all new infections of HIV/AIDS, with almost 90% of this number living in Sub-Saharan Africa. Shisana et al. (2009) also documented that in 2005 alone, the overall prevalence of HIV/AIDS for 15-24 year olds in South Africa was 10.3%, with female and male infection rate at 33% and 16%, respectively. In 2011, Kwa-Zulu Natal recorded the highest prevalence rate of HIV among females aged 15-24 years attending antenatal clinics at 25.5% compared to 20.5% nationally (Mimiaga, Biello, Reisner, Crane, Wilson, Grasso & Safren, 2015). In 2015, the number of South Africans living with HIV/AIDS had risen to 7 million, with the province of KwaZulu Natal having the highest HIV prevalence rate at 17.4% and the most affected group between the ages of 15-49 years (Manyapa, Nyembezi & Ruiters, 2017).

It is imperative to note that adolescents are not only infected by HIV/AIDS, they are also affected by it (Coetzee, Hilderbrand, Boule, Draper, Abdullah and Goemaere, 2005; Lyons, 2008). Given the high prevalence of HIV/AIDS among the South African population, there is consequently a high mortality rate among the adult population (Davids, Ncitalo, Pezi & Zungu, 2012). This has left many homes without parents or caregivers and has led to an increase in the number of child-headed households (Holborn & Eddy, 2011; Maqoko & Dreyer, 2007). In South Africa, approximately 1.5 million children and adolescents are orphaned as a result of parents or caregivers having died of HIV/AIDS (Davids et al., 2012). These young people assume parental roles at a very young age (Monash & Boerma, 2004). This in turn affects their optimal development and wellbeing (Monash & Boerma, 2004; Holborn & Eddy, 2011). According to Juma, Alaii, Bartholomew, Askew and Van den Bom (2013) child-headed households are often associated with poverty and deprivation which

have the potential of making one experience feelings of hopelessness, worthlessness and helplessness. Risky sexual behaviours, including early onset of sexual intercourse, has also been reported in households that have experienced a loss of income either through death or joblessness (Davids, Nkomo, Mfecane, Skinner & Ratele, 2006; Juma et al., 2013).

Studies have revealed that the age of onset for sexual intercourse is dramatically decreasing, with adolescents younger than 15 years engaging in sexual intercourse (Selikow, Ahmed, Flisher, Mathews & Mukoma, 2009). For instance, a study by Peltzer (2010) on 8 African countries documented that 48% of adolescents became sexually experienced by the age of 15 years. In South Africa, a study conducted by Love life in 2001 revealed that 5% of 12-13 year olds across all racial groups were sexually experienced and this percentage increased dramatically to 54% among 16-17 year olds (Bennie, 2003). Another study by Awotibe et al. (2014) in the North West Province, South Africa, documented that about 48% of sexually active adolescents reported having sex before the age of 15 years. These findings are congruent with Eaton, Flisher and Aaro (2003)'s study of adolescents' involvement in sexual activities that found that at least 50% of adolescents in South Africa are sexually active by the age of 16 years and 80% are active by the age of 20 years.

Early onset of sexual intercourse has been found to be associated with other risky sexual behaviours and their adverse outcomes (Selikow et al., 2009). Macphail and Campbell (2001) assert that early onset of sexual intercourse is associated with greater risk as younger adolescents are less likely to resist peer pressure to become sexually active, use protection and make sound sexual intercourse related decisions, because of youth and lack of experience. In the backdrop of HIV/AIDS, age of onset for sexual intercourse is an important risk factor because it determines the length of exposure to being infected (Shoba, 2009). Those who begin to engage in sexual activities during early adolescence are most likely to have a higher chance of being infected than those who delay.

Recent studies have recognised that risky sexual behaviour is higher in male adolescents compared to their female counterparts (Amoateng & Kalule-Sabiti, 2013; Amoateng et al., 2014; Berhan & Berhan, 2015; Shisana et al., 2009;). A Behavioural Health Survey Study (BHSS) of adolescents in eight African countries documented that 87.4% of male adolescents reported being sexually active compared to 73.1% female adolescents

(Shisana et al., 2009). In South Africa, a study that was conducted by Amoateng and Kalule-Sabiti (2013) on adolescents at the North West Province, documented that 61% of males compared to 39% of females reported to be sexually active. Amoateng et al. (2014) documented that by the age of 18 years 42% of females and 63% of males have become sexually active. These statistics highlight the gendered patterns of risky-sexual behaviour and suggest that male adolescents might be at higher risk compared to females.

It has also been reported that male adolescents have an earlier onset of sexual intercourse compared to their female counterparts, engage in multiple concurrent sexual partnerships and do not consistently use protection when having sexual intercourse (Berhan & Berhan, 2015; Manyapeló et al., 2017; Morojele et al., 2013). Such risky sexual behaviour patterns have been reported in a number of studies. For instance, in a study by Morojele et al. (2013) on Western Cape school going adolescents it was documented that 63.6% of males compared to 43.3% of females reported to have had sexual intercourse before the age of 15 years. In another study by Manyapeló and associates (2017) on KwaZulu Natal adolescent males 73% reported multiple concurrent sexual partners, while 41.1% believed that condoms 'take the fun out of sex'.

There are various reasons for males' engagement in risky sexual behaviour more than their female counterparts. Awotibe et al. (2014) attribute this behaviour to high testosterone levels in males. Some authors attribute males' reluctance to adopt healthy behaviours to masculinity constructions (Izugbara & Undie, 2008; Kheswa, 2015; Selikow et al., 2009). According to Mathewson (2009) masculinity constructions may perpetuate an image of men as strong, adventurous and invulnerable, which discourages positive healthy behaviours. Selikow et al. (2009) add that masculinity is closely associated with engaging in sexual intercourse, therefore adolescent boys find themselves compelled to engage in sexual intercourse, rather than being perceived as 'not being a man enough' (see also Jefftha, 2006).

## **2.6 Substance Use and Abuse among Adolescents**

Adolescents' use of substances is one of the major social and health concerns in South Africa and globally (Ellis, Stein, Meintjes & Thomas, 2012). These concerns have been



linked to earlier onset of risky sexual behaviours, scholastic, mental and physical problems, to mention but a few (Morojele, Parry, Brook & Kekwaletswe, 2012; World Health Organisation, 2010). There is also evidence that young adults who were substance abusers in their adolescent years are the hardest hit by unemployment in South Africa, as the country is facing higher rates of unemployment than any other middle-income country, with four out of ten South Africans unemployed (Willemse, 2015).

The United Nations' *World Drug Report* state that South Africa is one of the world's drugs capitals (WHO, 2010). According to WHO (2010), South Africa is rated among the top ten countries in the world when it comes to dagga smoking, alcohol, and other drugs of abuse. It is estimated that South Africans consume more than 5 billion litres of alcohol annually. This is among the highest per capita consumption rates in the world, and it is continually rising (WHO, 2010; Seggie, 2012). On the African continent, South Africa is the second country after Algeria when it comes to substance abuse (WHO, 2010). Cigarettes, dagga and alcohol are the substances that are commonly used by adolescents in South Africa (Morojele et al., 2012). Peltzer and Phaswana (1999) argue that these substances are easily accessible and readily available within many South African communities. These substances are major causes of violence and crime, injury and other social problems, including risky sexual behaviour among South African adolescents, according to Morojele et al. (2012).

Numerous studies have been conducted in an attempt to study the nature and extent of adolescents' engagement in substance use and abuse (Carr, 2005; Conrod, Stewart, Comeau & Maclean, 2006; Flisher et al., 1993; Lennox & Cecchin, 2008; Morojele et al. 2012; Peltzer & Phaswana, 1999; Pithey & Morojele, 2002; Reddy, et al. 2010; South African Medical Research Council, 2008; Taylor, Jinabhai, Naidoo, Keinschmidt & Dlamini, 2009). Studies have shown that engagement in substance use during adolescent years can have lifelong effects. Brain imaging studies show that the use of alcohol, cigarettes and other drugs at an early age affect the hippocampus, which is the structure in the brain responsible for regulating memory and learning (Marshall, 2014; McNeely & Blanchard, 2009; Spear, 2000). Studies have also revealed that smoking cigarettes results in cell damage and loss in all age groups. However, the damage is worse among adolescents because their brain is quick to become nicotine dependent (Lubman, Yesel & Hall, 2007). Lubman, Yesel

and Hall (2007) state that the “adolescent brain may be more vulnerable to the effects of addictive substance because of the extensive neuro-maturational processes that occur during this period” (p.92).

Initiating smoking cigarettes during adolescence is also linked with the development of nicotine dependence (Pahl, Brook, Morojele & Brook, 2010) as well as health complications such as, upper respiratory infections, delayed lung development and lung cancer, in adulthood (Park, 2011). Nicotine dependence among adolescents is one of the predictors of involvement in risk-taking behaviours. For an example, in a study examining nicotine dependence and adolescents' problem behaviours among urban South African adolescents, Pahl et al. (2010) documented that higher level of nicotine dependence predicted high levels of other drugs use and risky sexual behaviour.

Regarding alcohol, adolescents who drink alcohol earlier are more likely to become alcohol dependent more than those who wait until the age of 21 (Mcneely & Blanchard, 2009). There is also evidence that drinking alcohol during adolescence exposes users to cognitive functioning impairment and induces cortical damage in the developing brain (Lubman, Yesel & Hall, 2007). This increases vulnerability to injury or harm and also development of abnormal drinking patterns, including alcohol abuse and alcohol dependence (Marshall, 2014). Alcohol is also regarded as the greatest contributor to road accidents and the increase in the rate of HIV/AIDS infection in South Africa (Parry, 2010). Ghuman (2009, p.9) adds that “alcohol contributes to traumatic outcomes that kill or disable individuals at a relatively young age, resulting in the loss of many years of life due to death or disability.”

Dagga is a commonly used illegal substance worldwide, and more than one million adolescents in the United States of America have tried it (NIDA, 2011). An alarming upward trend has been reported in the use of marijuana among South African adolescents. Statistics by NIDA (2012) show that 19% of adolescents reported to have smoked marijuana in 2008 compared to 27% in 2012. It is estimated that about 1.5 million adolescents are smoking marijuana countrywide (NIDA, 2012). Smoking dagga is linked to a myriad of psychopathological and behavioural complications, high dropout and expulsion rate from school in adolescents (Koen, Jonathan & Niehaus, 2009). Exposure to dagga during

adolescence causes structural abnormalities in the brain, resulting in poorer cognitive functioning and the possibility of developing neurodevelopmental difficulties (Lisdahl, Wright, Medina-Kirchner, Maple & Shollenbarger, 2014). Research on marijuana smoking adolescents also reported a correlation between marijuana smoking and risky sexual behaviour (Schuster, Crane, Memelstein & Gonzalenz, 2012).

Globally, it is estimated that 13 million adolescents between the ages of 12 years and 17 years engage in alcohol, cigarette and other psychoactive drugs annually (Lennox & Cecchin, 2008). It is estimated that all over the world, 10 million young people between the ages of 12 and 20 consume alcohol every day (WHO, 2012). Research has also discovered that globally one in five adolescents smoke cigarettes (United Nations, 2009). Major studies in the United Kingdom and United States of America have shown that by 19 years of age, approximately 90% of adolescents have drunk alcohol, 60% have tried cigarette, 50% have used marijuana and 20% have tried other street drugs such as solvents and opiates (Carr, 2005; Chanakira, O'cathain, Goyder & Freeman, 2014). Regarding university students and alcohol consumption, a qualitative study by Chanakira, O'cathain, Goyder and Freeman (2014) among university going students in the United Kingdom (UK) found that nearly all participants regarded alcohol as the integral part of student life. They also documented that because of its dis-inhibitory effect and social acceptability, several students prefer alcohol over other substances (Chanakira, O'cathain, Goyder & Freeman, 2014).

Research reported an upward trend in the use and abuse of substances among adolescents in South Africa (Moodley, Matjila & Moosa, 2012; NIDA, 2012; Ramlagan, Peltzer & Matseke, 2011). Most adolescents use alcohol or cigarettes as gateway drugs before engaging in illegal substances such as marijuana, cocaine or heroin (Morojele et al., 2012). Jayousi (2003) stated that the period between 13 and 17 years is a stage of great risk for cigarettes smoking, whereas between 17 and 19 years is a period of great risk for alcohol and marijuana smoking.

A study conducted by Reddy, et al. (2003) documented that approximately 31% of South African high school students have smoked cigarette, with about one-fifth of them being current smokers. A national survey of high school adolescents conducted in 2008

discovered that 30% of adolescents are reported ever to have smoked cigarettes, 50% reported to have used alcohol and 13% are reported ever to have smoked dagga in their lifetime (Reddy et al. 2010). Another 29% are also reported to have drunk more than 5 alcoholic drinks on one occasion. When it comes to alcohol, the above findings are consistent with Taylor et al. (2009)'s research on KwaZulu Natal school-going adolescents reported that at least 52% had drunk alcohol and 13% of those adolescents were weekly drinkers.

Research has also documented the differences in engagement in substance use and abuse between male and female adolescents (Parry, Morojele, Saban & Flisher, 2004; Taylor et al. 2009). Male adolescents use substances more than their female counterparts. For instance, a study that was conducted by Peltzer & Phaswana (1999) on students at the university in the Northern Province, found that 57% of male and 27% of female participants reported the use of substances at varying levels. Taylor et al. (2009)'s study on school-going adolescents in KwaZulu Natal also reported similar trends, they found that 52% of males compared to 25.5% of females ever used alcohol. About 13.1% males compared to 2% females smoked more than one cigarette a day. When it comes to dagga, 16.9% of males compared to 2.3% of females are reported ever to have smoked dagga (Taylor et al. 2009). The most recent demographic and health survey by Medical Research Council (2008) in South Africa found that among adolescents aged between 15 years and 19 years, 19.9% of males and 10.2% of females had ever used cigarette; 31.9% of males and 17.2% of females reported ever having consumed alcohol. The study in the Cape Peninsula high school learners also reported similar trends (Flisher et al., 1993).

There are different explanations that speculate on the large number of male adolescents engaging in substance use compared to females (Mahalik, Burns & Syzdek, 2007; Reardon & Govender, 2013). According to Mahalik, Burns and Syzdek (2007) some masculinity constructions, such as hegemonic masculinity, perpetuate an image of males as strong and invulnerable, which in turn discourages health positive behaviours among males (Mahalik, Burns & Syzdek, 2007). Hegemonic masculinity may be defined as a dominant socially idealised way of being a man in a particular social context (Rich et al., 2015). Lindegger and Quayle (2009) argue that endorsement of traditional masculine norms and values is implicated in a variety of risk-taking behaviours, including substance use and risky

sexual behaviour. Thus, it may be concluded that male adolescents might engage in substance use as a way of showing their masculinity. Marshall (2014) contends that adolescents who are experiencing high levels of environmental stress may drink or use substances as a maladaptive coping mechanism. Lack of recreational facilities, easy access to illegal substances, unemployment and poverty have been cited by Ramlagan, Peltzer and Matseke (2011), as contributing factors to increased substance use among adolescents. According to Peltzer and Phaswana (1999), in an African context, the combination of traditional cultural practices and the increasingly pervasive ethos of 'modernity' and 'westernisation' may be responsible for an increase in substance use and abuse among young people.

Moreover, Wolf-King and Maisto (2009) deduce that the prevalence of alcohol consumption is in part due to the fact that alcohol is usually part of social gatherings, rites of passage and other festivities in the African context. To substantiate this point, Peltzer and Phaswana (1999) cite a study which was conducted by Nyirenda and MacLachlan (1994) in Malawi. In that study researchers were investigating the influence of cultural beliefs and practices in the usage of dagga (cannabis) in modern Malawi and it was documented that cultural beliefs and festivities are among prime precipitating factors when it comes to dagga smoking.

Furthermore, different theoretical explanations have been offered to the aetiology of substance use (Herwig-Lemp, 1996). For an example, the psychoanalytic oriented theories of alcohol use and drug addiction attribute substance use and abuse to the developmental arrest or fixation in the oral stage of psychosexual development (Nevid, Rathus, & Greene, 1997). They further deduce that fixation is as a result of unmet infantile or childhood need for oral gratification. Among other behaviours, substance abuse is viewed as providing such gratification (Bratter & Forrest, 1985). Other psychodynamic approaches maintain that substance dependent individuals are predisposed to use and abuse substances, as a result of fragmentation of the ego and disturbances in their sense of self (Nevid, Rathus, & Greene, 1997).

## **2.7 Co-existence of Substance Use and Risky Sexual Behaviour**

Research shows that substance use and sexual behaviour tend to co-occur in some individuals (Centre for Justice and Crime Prevention, 2008; Flisher et al., 1993; Igra & Irwin, 1996; Palen, Smith, Caldwell, Mathews & Vergnani, 2009; Ritchwood, Ford, DeCoster, Sutton & Lochman, 2015; Smith, Palen, Caldwell, Flisher, Graham, Mathews, Wegner & Vergnani, 2008). Among the adolescent population, there is evidence that engaging in one risk-taking behaviour paves the way for engagement in other risk-taking behaviours (WHO, 2010). There is also evidence that the onset of multiple-risk behaviours cluster in adolescence (Kipping, Campbell, MacArthur, Gunnell & Hickman, 2012). Palen et al. (2009) state that most risk-taking behaviours among adolescents have a common origin. Risky sexual behaviour and alcohol abuse may co-occur because the initiation of one behaviour leads to the occurrence of the other, either directly or indirectly, (Palen et al., 2009). For example, intoxication and lowered inhibitions may lead to sexual activities that would not have occurred if a person had not been under the influence of substances.

Little is known about how the initiation of these behaviours is sequenced (Palen et al., 2009). Various studies have pointed out that substance use tends to be the first risk-taking behaviour that adolescents initiate, followed by a transition to risky sexual behaviour (Palen, Smith, Flisher, Caldwell, & Mpofu, 2006; Palen et al., 2009; Hart, Ray & Ksir, 2009). This shows that adolescents who use substances are more likely to engage in risky-sexual behaviour because of being intoxicated.

Research has proven that most adolescents who drink alcohol or abuse other substances are likely to be sexually active than those who do not (Verweij, Zietsch, Bailey & Martin, 2009; Morojele et al., 2009; Palen et al., 2006; South African Medical Research Council, 2008). Substance use is reported to compromise adolescents' safer sex negotiation skills and inhibitions, thereby increasing their vulnerability to engagement in risky sexual behaviour (Kaufman, Braunschweig, Feeney, Dringus, Weis, Delany-Moretlwe & Ross, 2014; WHO, 2010). The unintended consequences of engagement in substance use and risky sexual behaviour include, among others, unprotected sex, sexual violence and having multiple sexual partners, which are associated with unplanned pregnancy, sexually transmitted diseases, and also the risk of the development of antenatal complications, such

as fetal alcohol spectrum disorders (Kalichman, Simbayi, Kaufman, Cain & Jooste, 2007; Morojele & Ramsoomar, 2016; Simbayi, Mwaba & Kalichman, 2006).

The relationship between alcohol and risky sexual behaviour has been documented in the United States of America (Wolf-King & Maisto, 2009). In a study that was conducted in Sunderland (USA), it was discovered that 44% of sexually active adolescents reported that they were more likely to engage in sexual activities after consuming alcohol (Bennie, 2003). Another research in the USA reported that as many as 22.1% of adolescents had taken substances during their last sexual encounter (Ritchwood et al., 2015).

In South Africa, the *National Youth Lifestyle Study* also found that there is a link between alcohol and drug abuse prior to engagement in sexual activities among adolescents (Centre for Justice and Crime Prevention, 2008). This trend also emerged in a study conducted by Palen et al. (2006) in North West Province where 39% of adolescents reported using alcohol or dagga during their last sexual encounter. About 23% in that study reported that substances influenced their decision to engage in sexual intercourse and 26% reported using alcohol in order to feel more comfortable during sexual encounter. The above-mentioned findings are consistent with the findings of a study conducted by Smith et al. (2008), among South African high school adolescents, where adolescents also reported that using alcohol and other drugs influenced their involvement in sexual activities. Adolescents further reported that when they were under the influence of intoxicating substances, they felt more confident and comfortable with their sex partners and less likely to practice safe sex (Smith et al. 2008).

When it comes to gender differences regarding involvement in substance use and risky sexual behaviour, studies have shown that more male adolescents than females engage in these behaviours (Brook et al., 2006; Kheswa, 2015; Morojele et al., 2013). For an example, in their study of risky sexual behaviour and substance use of adolescents in the Western Cape, Morojele et al. (2013) reported that 28% of male adolescents and 21.2% of female adolescents engage in sexual activities while under the influence of substances. A systematic review of South African adolescent studies by Kheswa (2015) also found that more male than female adolescents engage in risky sexual practices after ingesting intoxicating substances.

## **2.8 Risk and Protective Factors Associated with Adolescents' Involvement in Substance Use and Risky Sexual Behaviour**

### **2.8.1 Risk factors.**

There are a number of factors that render adolescents vulnerable to risk-taking behaviours. These include factors such as peer pressure, social context, genetic factors, cultural factors, socio-historical processes, poverty, socio-economic factors, poor locus of control, poor parental monitoring and cultural factors

#### **2.8.1.1 Peer pressure.**

The influence of peer pressure on adolescents' risk-taking behaviour has received considerable attention (Ghuman, 2009; Morojele et al., 2012). According to Bhana and Peterson (2009) as well as Dumas, Ellis and Wolfe (2012), there is a heightened need for peer group identification, separation from parents and individuation during the adolescence. At this stage, adolescents experience numerous peer-related interactions that are likely to shape their normative behaviours and attitudes concerning engagement in risk-taking behaviours. Fearing ostracisation, adolescents who perceive peer group affiliation as important tend to conform to dominant peer group norms as a way to fulfil group expectations and secure its membership. Affiliation with deviant and sexually active peers is linked to greater likelihood of involvement in sexual activities, delinquent behaviour and substance use (Barber & Oslen, 1997; Crockett, Raphaelli & Shen, 2006; Morojele et al., 2012).

A study by Gardner and Steinberg (2005) reported that adolescents take more risks when observed by their friends. Such observation was also reported by Rozi, Mahmud, Lancaster and Zahid (2016) in their study of smoking patterns of Pakistani boys, where they found that having friends who smoked cigarettes was the important predictor of adolescent boys' smoking since they spend more of their time with friends than at home. Peer pressure to perform or engage in certain behaviours have been found to occur among both male and female adolescents (Selikow et al., 2009). Adolescent boys are normally competitive and in most cases they would try to outshine each other. As a result, they might engage in risk taking behaviours in order to adhere to the group norms and



show virility even if they had no intention of engaging in those behaviours (NIDA, 2011). Eaton, Flisher and Aaro (2003) add that when it comes to girls, peer pressure often comes from sexually experienced peers who exclude inexperienced girls from group discussions because they are still 'children'.

### **2.8.1.2 Intrapersonal psychological characteristics.**

There are intrapersonal factors among adolescents that play a role as barriers to safe sexual practices and substance use. Self-regulation, low self-esteem, perceived external locus of control, self-efficacy and depressive symptoms, are among the commonly mentioned intrapersonal factors that render adolescents vulnerable to risk-taking behaviours (Bandura, 1997; DiClemente, 2003; Morojele et al. 2013; Chilisa et al., 2013). Self-regulation is achieved when adolescents are able to monitor and control their emotions and behaviours. They achieve that through attaining and making use of internal cognitive assessment and affective processes as well as cues and feedback from the outside environment (Bhana & Petersen, 2009). DiClemente (2003) argues that diminished self-regulation may lead to impulsivity, delinquent behaviour and rebelliousness which are risk factors for substance use and risky sexual behaviour (Brook et al., 2006). The ability to self-regulate can be compromised by poor cognitive capabilities as well as emotional distress caused by contextual psychosocial challenges.

The notion of locus of control refers to individuals' perception of the control they have over the events that occur in their lives (Rotter, 1954). External locus of control can be defined as the perception that individuals have of events as being unrelated to their own behaviour and therefore beyond personal control (Pharr, Enejoh, Mavegam, Olutola, Karich & Ezeanolue, 2015). Individuals with external locus of control view their health choices and decisions as out of their control and thus engage in less positive and protective behaviours while believing that others are responsible for their decisions (Pharr et al., 2015). A study of adolescents in the United Kingdom by Mendolia and Walker (2014) found that adolescents with an external locus of control have a 15% to 16% higher risk of a past unprotected sexual intercourse and were younger than sixteen years at first sexual encounter. Furthermore, research by Burnett, Sabato, and Smith (2014) evaluating the influence of locus of control on university adolescents' sexual behaviour and substance use in the United States found

that university adolescents with an external locus of control were more likely to adopt risky sexual practices and abuse substances.

In South Africa, a study conducted by Bennie (2003) reported that low self-esteem, perceived external locus of control and self-efficacy in adolescents lead to risk-taking behaviours such as substance use and risky sexual behaviour. Self-efficacy, the perception that one can engage in protective behaviour, is highlighted by Chilisa et al. (2013) as the key factor in predicting health-related behaviour in adolescents. According to Bandura (1997), the weaker one's self-efficacy to practice personal control, the greater are the chances that psychosocial aspects, such as peer pressure, will take control of that individual. Flay and Petraitis (1994) assert that self-efficacy is largely influenced in the first instance, by behavioural and emotional control, which incorporates the concept of self-regulation.

Self-esteem, the individual's perception of their self-worth or their ability to feel positive about themselves (Coleman & Henry, 1990), is also one of the factors that have the potential to influence risk taking behaviours among adolescents (De Bruijin, Kremers, van Michelen & Brug, 2005). Adolescents with low self-esteem, according to Wenar and Kerig (2000), are prone to risk-taking behaviours, such as substance abuse, as means of enhancing their self-image, self-confidence and gaining status. Low self-esteem has also been associated with adolescents' susceptibility to risky sexual behaviour, including having unprotected sex and multiple partners (Chilisa et al., 2013).

Symptoms of depressive disorder such as diminished sense of wellbeing, hopelessness and helplessness are also linked with adolescents' risk-taking behaviours (Langille, Asbridge, Kisely & Wilson, 2012; Morojele et al., 2012). Depressed adolescents propelled to risk-taking behaviours by failure to negotiate well the symptoms of depression. For instance, a study conducted by Langille et al. (2012) on Canadian adolescents established that depressive disorder in adolescents is associated with unprotected sex, substance use, multiple sexual partners and non-use of contraceptives.

### **2.8.1.3 Genetic predisposition.**

A variety of genetic studies have pointed out the existence of a genetic pathway when it comes to engagement in risk-taking behaviours, especially substance abuse (Carr, 2005; Mayfield, Harris & Schuckit, 2008; Verweij et al., 2009). Evidence shows that a shared genetic pathway, whereby having a father with alcohol dependence, places adolescents at increased risk for developing substance use disorders as well as conduct disorder (Haber, Jacob & Heath, 2005). Family and twin studies lend support that a proportion of risk of inheriting predisposition for substance use and abuse for children of substance abusers is between 40% and 60% (Mayfield et al., 2008). Some studies have also documented that children of people who abuse alcohol are four times more likely to abuse alcohol than children of non-alcoholics when they are adults (Sales & Irwin, 2013).

### **2.8.1.4 Familial and environmental factors.**

Growing up in a dysfunctional familial environment and in a community where risk-taking behaviours are permissible, predisposes adolescents to risk-taking behaviours. Growing up in an environment where there is exposure to public drunkenness and easy access to substances is associated with adolescents' engagement in substances (Feldstein & Miller, 2006; Morojele et al., 2012). For instance, in the family environment where there are permissive drinking norms and parental or caregiver consumption (modelling), there is a high likelihood that children will internalise those norms and act upon them (Morojele et al., 2013). Furthermore, there are some parenting behaviours that have been associated with adolescents risk-taking behaviours. These parenting behaviours include lack of parental involvement, lack of parental monitoring, inconsistent discipline and authoritarian parenting style (Neuman, Harrison & Dashif, 2008). A distant and unhealthy parent-child relationship is largely implicated in behavioural attributes and personalities such as impulsivity, psychological distress and rebelliousness which are counted among the predictors of risk-taking behaviours (Brook et al., 2006). Jefftha (2006) adds that "adolescents in non-traditional families have a greater tendency to exhibit substance-use-related behaviours earlier than their counterparts from more traditional families" (p.21).

### **2.8.2. Protective factors.**

There are a number of factors that act as a protective against involvement in substance use and risky sexual behaviour among adolescents (Bhana & Petersen, 2009; Costa, Jessor & Turbin, 2005; Luthar & Chicchetti, 2000). According to Bhana and Petersen (2009), protective factors against adolescents' risk-taking behaviour are multifaceted. They may be viewed from an individual level, interpersonal level, community level and structural level. These are discussed below.

#### **2.8.2.1 Individual level.**

Resilience is the main protective factor when it comes to engagement in risk-taking behaviour at an individual level (Fergus & Zimmerman, 2005). Resilience refers to a natural ability to thrive or to persevere in the face of adversity (Bhana & Petersen, 2009). This concept has been largely used when referring to the plight of children and adolescents who display a positive adaptation in the face of adverse and distressing experiences (Luthar & Chicchetti, 2000; Mampane, 2014). Some empirical studies on resilience demonstrate that many adolescents triumph over overwhelming risks in their environment and develop successfully into competent and resilient individuals (Fergus & Zimmerman, 2005). For example, resilient adolescents who were brought up in broken and dysfunctional family environments full of violent behaviour may still grow up to be responsible and productive adults as if they were never negatively affected by their environment.

Researchers attribute such resilience to different intrapersonal and environmental qualities. According to Burnett et al., (2014) individuals with high self-esteem, self-efficacy, internal locus of control and self-regulation are more resilient when it comes to temptations of engaging in risk-taking behaviours. Mampane (2014) asserts that adolescents who are living under adverse developmental conditions benefit from social support to overcome obstacles and thereby enhancing their own resilience to facing difficulties. This suggests that when the surrounding environment fosters resilience through providing support structures to adolescents, engagement in risk-taking behaviours could be delayed or abated.

### **2.8.2.2 Interpersonal level.**

At the interpersonal level, peers' disapproval of risk-taking behaviour (Barber & Oslen, 1997) and stable family environment (Costa et al., 2005; Telzer, Gonzales & Ivligni, 2014) are among significant interpersonal factors that protect adolescents against engagement in risk-taking behaviours. Eaton et al. (2003) posit that peer pressure is not always negative in that positive examples set by peers can promote safer behavioural patterns. For instance, a study conducted by Eaton et al. (2003) found that adolescents whose friends advocate delayed sexual intercourse debut tend to delay engagement in sexual activities themselves. As peers play a significant role in adolescents' lives, peer education programmes have been increasingly advocated as important avenues that could be used to deal with risk-taking behaviours (Barber & Oslen, 1997).

Growing up in a family environment where there is order and where there are boundaries is also considered one of the protective factors when it comes to adolescents' risk-taking behaviours (Bhana & Petersen, 2009). A stable family environment is characterised by high support, warmth and responsiveness as well as high expectations, monitoring and developmentally appropriate control (Bhana & Petersen, 2009). Breinbauer and Maddelano (2005) further attest that a stable environment, with an authoritative parenting style is associated with decreased adolescents' risk-taking behaviour since it enhances individual-level virtue of greater self-control, peer resistance and decreased psychological distress.

A health study of American adolescents by Costa et al., (2005) reported that perceived support from, and closeness with, family is associated with decreased involvement in risk-taking behaviours. In addition, Barber & Oslen's (1997) study of Chinese and American adolescents also showed that parental monitoring, warmth and support were all significantly associated with lower involvement in risk-taking behaviours. Thus, a healthy family environment and disapproval of engagement in risk-taking behaviours by peers are both important protective factors when it comes to adolescents' risk-taking behaviours.

### **2.8.2.3 Community and structural-societal levels.**

At the community level, availability of intervention programs aimed at curbing social ills associated with adolescence may serve as a protective factor against adolescents' involvement in risk-taking behaviours (Shisana et al., 2005) In South Africa, there are various programmes that have been devised in order to deal with adolescents' risk-taking behaviours. These include Love Life Campaign, Khomanani, Scrutinize Campaign and Soul City project, to mention but a few. Most of these community based programmes assume a preventive stance in that they aim at curbing risk-taking behaviours before their onset. Shisana et al. (2005) argue that these programmes are well known by youth, with most of the adolescents reporting that they find them informative and useful. However, it is not known if such programmes are easily accessible to the least fortunate adolescents, especially those who are from impoverished rural backgrounds.

At the structural societal level, socio-cultural norms and values serve as important protective factors against adolescents' risk-taking behaviours (Bhana & Petersen, 2009). According to Mudhovozi, Ramarumo and Sodi (2012) the key assumption in African cultures is that senior family and community members are socialising agents of appropriate behaviour in children and adolescents. This suggests that advice about pro-sexual behaviour is not only confined to a family environment but is also rendered in the formal initiation ceremonies. For example, historically sub-Saharan Africa is known for its many rituals that are performed for adolescents to mark their passage to adulthood. These rituals serve as a cushion against partaking in activities that amount to risk (Bhana & Petersen, 2009). For girls, the rituals help to entrench the social control of female sexuality and fertility within the marriage exchange (Bhana & Petersen, 2009). For boys, Mudhovozi et al. (2012) stress the role played by initiation schools in imparting knowledge about sexuality and morals.

It is evident from the above section that risk and protective factors of adolescents' risk-taking behaviour are multi-layered. There are risk and protective factors that operate within an individual domain and those that operate among peer groups, family, the community and also the society at large. It is also apparent from the review of the literature that adolescents are subject to a number of mental health problems. What is not known is whether they do receive professional help after experiencing psychosocial difficulties and

psychopathology. Adolescents' help-seeking behaviour and barriers to help seeking will be briefly discussed in the next section.

## **2.9. Help-Seeking Behaviour in Adolescents**

Help-seeking behaviour refers primarily to steps individuals take to obtain some form of solution, advice or direction to relieve the distressing problems or experiences they have (Rickwood, Deane, Wilson & Ciarrochi, 2005). When it comes to health-related issues, help-seeking can be conceptualised as a behaviour designed to elicit assistance from health professionals in response to physical or emotional problems (Cornally & McCarthy, 2011). In adolescents, help-seeking behaviour comprises any form of disclosing disturbing issues to adults or significant others, and the perception of oneself as in need of help (Pisani, Schmeelk-cone, Gunzler, Petrova, Goldston, Tu & Wyman, 2012). This purports that for help-seeking behaviour to occur, an adolescent should acknowledge that he/she has a problem, perceive himself/herself as a help-seeker and also disclose the problem or distressing situation to sources of help.

Adolescence is a period characterised by a number of psychosocial challenges and adolescents sometimes encounter difficulties in tackling the challenges on their own. Some of the challenges require adolescents to seek help from their peers, elders or professionals (Raviv, Raviv, Vago-Geden & Fink, 2009). However, research has shown that adolescents seldom seek help when experiencing difficulties (Gulliver, Griffiths & Christensen, 2012; Raviv et al., 2009; Raviv, Sills, Raviv & Wilansky, 2000).

Global estimates suggest that between 60 - 90% of adolescents with mental health problems do not receive treatment (Knopf, Park & Muyle, 2008). Gilchrist and Sullivan (2006) argue that most of those adolescents who are in need of mental health assistance do not actually seek help. There are various reasons behind the lack of help-seeking behaviour among adolescents. Some authors have cited factors such stigma and discrimination of people with mental health problems (Egbe, Brooke-Sumner, Kathree, Selohiwe, Thornicroft & Petersen, 2014) and lack of community mental health facilities that are more adolescent

friendly (Patel, Flisher, Hetrick & McGorry, 2007; Burns, 2011) amongst the barriers to adolescent help-seeking. These will be briefly discussed below.

### **2.9.1 Stigma and discrimination.**

Stigma and discrimination of people who seek help from mental health professionals could be a barrier to adolescent help-seeking (Egbe et al., 2014). This was evident in the study of barriers to help-seeking of Australian adolescents by Gilchrist and Sullivan (2006), where adolescents reported that they would be perceived as 'uncool' or 'weak' by peers, if they were to seek professional help when experiencing mental health difficulties. This in turn discourages them from seeking help.

In most cases, adolescents experience internalised and externalised stigma when they have mental health problems (Egbe, et al. 2014). Externalised stigma refers primarily to negative stereotypes that the general public, including the media, and significant others may have about people with mental health problems (Kapungwe, Cooper, Mwanza, Mwape, Sikwese, Kakuma, Lund & Flisher, 2010), on the one hand. On the other hand, self-stigma refers to the negative perception that people who are experiencing mental health problems hold of themselves (Kapungwe, Cooper, Mwanza, Mwape, Sikwese, Kakuma, Lund & Flisher 2010). Although these types of stigma are interconnected and one can lead to the other, their overall effects on adolescents with mental health difficulties can be far reaching. They can exacerbate low self-esteem, social isolation, poor social support and social anxiety (Thornicroft, Brohan, Kassam & Lewis-Holmes, 2008). These may lead to marginalisation and discrimination which can exacerbate barriers to seek-help (Kapungwe et al., 2010).

Corrigan (2004) argues that stigmatisation discourages psychologically challenged individuals from accepting that they are mentally ill, to seek help and to remain in treatment. This in turn exacerbates their difficulties and may propel them to use unconventional means of dealing with psychological problems, for an example, engaging in substance use as means of warding off distress.



### **2.9.2 Lack of adolescents' mental health facilities.**

Lack of mental health facilities that are designated for adolescents is one of the biggest challenges when it comes to adolescents' mental health in South Africa and other developing countries (Fakier & Myers, 2008; Flisher & Gevers, 2010). Patel, Flisher, Hetrick and McGorry (2007) state that adolescents' mental health is a neglected public health concern in developing countries, including South Africa. There is a shortage of mental health facilities and professionals in South Africa (Burns, 2011; Saxena, Thornicroft, Knapp & Whiteford, 2007;). Most facilities are not adolescent friendly; adolescents end up being treated in the same facilities as adults (Kleintjes, Lund, Flisher & MHaPP Research Consortium, 2010). For an example, in the province of KwaZulu-Natal, which has a population of about 10 million, there are only two child and adolescent psychiatry specialists within the public health system (Burns, 2011). In South Africa as a whole, only 1.4% of outpatient facilities, 3.8% of acute beds in general hospitals and 1% of beds in psychiatric hospitals are designated for children and adolescents (Burns, 2011).

This clearly indicates that even those who do seek help encounter the problem of scarcity of facilities which cater for the mental health needs of adolescents. In an adolescents' help-seeking study conducted by Ot wombe et al. (2015) in Soweto, South Africa, adolescents reported that the scarcity of facilities was one of the prime reasons for not seeking help when facing psychological or mental health problems. The shortage might propel adolescents to make use of other means to cater for their mental health needs. Some may even employ maladaptive ways of coping with distress, including engaging in risk-taking behaviours.

In conclusion, this section briefly discussed help-seeking behaviour and also highlighted the barriers to adolescents' help-seeking. Stigmatisation of individuals with psychological difficulties and the lack of adolescents' mental health facilities were discussed as barriers to adolescent help-seeking. Not to seek help when experiencing psychological upheavals is linked to the exacerbation of the problem and also the use of maladaptive ways of dealing with psychological difficulties, for instance, engagement in risk-taking behaviours, such as substance use.

## 2.10 Theoretical Framework: Health Belief Model

A myriad of theories has been developed in attempting to explain different pathways to adolescents' risk-taking behaviour. For instance, theories such as social norms theory (Berkowitz, 2004), behavioural decision making theory (Haward & Janvier, 2015), health belief model (Tarkang & Zotor, 2015) and the theory of reasoned action (Ajzen, 2001), to mention but a few. However, only the Health Belief Model (HBM) is used as the theoretical framework which informs the current study. This model is relevant because it is widely used in explaining health-related behaviours and has been found to be more applicable in explaining adolescents' risk-taking behaviours (Downing-Matibag & Geisinger, 2009; Tarkang & Zotor, 2015).

The Health Belief Model was developed in the 1950s by a group of U.S Public Health Social Psychologists as a way to explain why medical screening programmes offered by the government were not successful due to lack of participation of the public (Rosenstock, 1990). Since its inception, the Health Belief Model has been used to inform the development of interventions aimed at curbing unhealthy behaviours (Jones, Smith & Llewelyn, 2014). Currently the Health Belief Model is the most frequently used model in health promotion, education and disease control (Tarkang & Zotor, 2015). The basic principle of the Health Belief Model is that health behaviour is dictated by personal beliefs and perceptions about the disease and the strategies available to decrease its occurrence (Hauchbaum, 1958; Rosenstock, 1974). It also posits that personal beliefs and perceptions are influenced by numerous interpersonal factors affecting behaviour (Eaton, Flisher & Aaro, 2003). Tarkang and Zotor (2015) add that the Health Belief Model basically focuses on "...psychosocial factors such as knowledge, attitudes, beliefs, intentions and personality traits that influence behaviours" (p.2).

Initially, the Health Belief Model had four main basic constructs (Tarkang & Zotor, 2015)), which are: perceived susceptibility, perceived severity, perceived benefits and perceived barriers. More recently the Health Belief Model has been expanded to include *cues to action* and *self-efficacy* among the basic constructs (National Cancer Institute, 2003). HBM assumes that people in face of risk, are ready to act if they:

- Believe that they are susceptible to disease or harm (*perceived susceptibility*)

- Believe that the risk has far reaching consequences (*perceived severity*)
- Believe that taking action would reduce their susceptibility (*perceived benefits*)
- Believe that costs of taking action (*perceived barriers*) are out-weighed by benefits
- Are exposed to factors that prompt action, for an example media (*cues to action*)
- Are confident in their ability successfully to perform action (*self-efficacy*) (Glanz, Rimer & Lewis, 2002).

Each of the Health Belief Model constructs is briefly discussed below in relation to adolescents' risk-taking behaviours.

### **2.10.1 Perceived susceptibility.**

Perceived susceptibility is one of the powerful predictors of people's adoption of healthier behaviours (National Cancer Institute, 2003). The Health Belief Model holds that the greater the perceived risk, the greater the likelihood of engaging in behaviours directed at minimising risk (Rosenstock, 1974). However, that is not what always happens to people when they perceive that they are susceptible to danger. Sometimes the opposite occurs: in some cases, when people believe that they are not at risk, unhealthy behaviours tend to occur (Yep, 1993). This was evident in a study by Yep (1993) on Asian American students who tended to perceive HIV as a non-Asian problem. Yep (1993) discovered that their perception of susceptibility to HIV infection was low and not associated with practising safe sexual intercourse. In some instances, even when the perception of risk is high, individuals still engage in unhealthy practices. For example, in a study by Lewis and Malow (1997) on American college youth, it was discovered that students were still engaging in risky sexual behaviour even though they perceived contracting sexually transmitted diseases as a high risk.

### **2.10.2 Perceived severity.**

This construct addresses how serious a risk or disease can be that a person is susceptible to. Perceived severity "may be judged both by the degree of emotional arousal created by the thought of a disease as well as by the kinds of difficulties the individual believes a given health condition will create for him" (Rosenstock, 1974, p.330). In order to improve quality of life, the Health Belief Model seeks to raise awareness of how serious the outcomes of unhealthy behaviours can be (Rosenstock, Stretcher & Becker, 1994). This would happen if adolescents would be encouraged to believe that engagement in risk-taking behaviours poses a serious threat to their lives and act upon that realisation.

### **2.10.3 Perceived benefits.**

The perceived benefits construct looks at a person's opinion or perception about the value of adopting new behaviour or taking precautionary measures against risk or disease (Rosenstock, 1974). Rosenstock, Strecher & Becker (1994) stress that people's beliefs in this construct are subject to normative influences of their social groups. Generally, theories of health behaviour that are operating on an intrapersonal level assert that people consider positive and negative attributes of preventive healthy behaviours and the balance will influence the resultant behaviour (Eaton, Flisher & Aaro, 2003). For instance, an adolescent may engage in risk-taking behaviour after realising that he or she would lose the benefits of being in the peer group.

### **2.10.4 Perceived barriers.**

According to National Cancer Institute (2003), a perceived barrier to adopting healthy behaviour or action is dictated by an individual's own evaluation of the obstacles that are preventing him or her from adopting a healthy behaviour or action. In order for healthy behaviour to be adopted, an individual ought to believe that the benefits of the new behaviour outweigh the consequences of abandoning the old behaviour (Becker & Joseph, 1998; National Cancer Institute, 2003). This in turn enables the obliteration of barriers and gives way for the adoption of new healthy behaviours and actions. For an example, pain and death may serve as barriers against circumcision in young South African males. However, if they believe that circumcision is a healthy behaviour since it reduces chances of contracting HIV and other STIs, there is a high possibility of barriers (e.g. pain) to be eradicated since benefits outweigh the consequences that one may suffer as a result of keeping a foreskin.

### **2.10.5 Cues for action.**

Cues to action refer to events, people or things that influence people to change their behaviour (Graham, 2002). For example, a person may be prompted to use protection every time when engaging in sexual intercourse following witnessing the AIDS-related death of a significant other.

### **2.10.6 Self-efficacy.**

The construct of self-efficacy can be defined as the personal belief in one's own ability to do something (Bandura, 1977). Moreover, it has been mentioned above that lack of self-efficacy is one of the determinants of partaking in risk-taking behaviours among adolescents (Flay & Petraitis, 1994). An individual may be able to perceive a potential risk and be willing to take precautionary measures against that potential risk. However, if that particular individual has low self-efficacy he or she will encounter difficulties in taking action (Eaton, Flisher & Aaro, 2003). For example, if an individual adolescent perceives danger in engaging in risk-taking behaviours but lacks confidence to withdraw from peers with bad influence, he or she will not take action, despite perceiving risk-taking as a health risk.

Although useful, the Health Belief Model is criticised for putting the emphasis on intrapersonal processes and subjective influence of social influences, to the neglect of distal and cultural contexts that largely influence behaviours and choices that individuals make in their lives (Blue, Shove, Carmona & Kelly, 2014; Eaton, Flisher, Aaro, 2003; Jones, Smith & Llewelyn, 2014). Blue, et al. (2014) posit that behaviours, such as smoking, are a product of social and contextual practices that persist overtime beyond individual choices. Thus, for the better understanding of risk-taking behaviours of adolescents in South Africa, one need not look only at the individual, but one should also take into account objective social, economic, environmental and socio-political factors that impact on individuals' health-related choices, perceptions and behaviours

## **2.11 Chapter Conclusion**

This chapter began with the definition and discussion of adolescence. Biological, social and psychological changes and challenges associated with adolescence were discussed. This was followed by a brief discussion of adolescents' psychopathology. Attention was then turned to challenges facing adolescents in South Africa, with special focus on unemployment and poverty. A review of literature on adolescents' risky sexual behaviour and substance use/abuse was done. Discussion of risk and protective factors associated with adolescents' involvement in substance use and risky sexual behaviour followed. Factors impacting on adolescents' help-seeking behaviour were then discussed, with special attention to stigma attached to mental illness and lack of community mental health

facilities designated for adolescents. Lastly, in this chapter, the Health Belief Model was outlined as a theoretical framework of understanding health-related behaviours of adolescents. This model was selected because of its proven relevance in explaining adolescents' risk taking behaviour, which are central to the current study.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

The primary objective of this study is to compare the relationship between substance use and risky sexual behaviour among adolescents who are at tertiary level and those who are neither studying nor employed. In order to achieve the aforementioned objective, specific research methodologies, tools and design needed to be utilised. In this chapter, research design and methodologies that were employed in order to achieve the aim and objectives of the current study are presented. These include the research design, sample and sampling method and data collection. Data analysis, reliability, validity of the data collection questionnaire as well as ethical issues that were taken into consideration, are also presented in this chapter.

#### **3.2 Research Design**

Research design refers to the set of strategies to be followed in addressing a research question. It provides specific directions on how the researcher plans to research the phenomena under study (Creswell, 2014). Babbie and Mouton (2010)) state that research design is expected to guide a researcher in planning and conducting a study in a manner that is likely to maximise the chances of attaining intended outcomes. In the current study a quantitative research design is employed. According to Durrheim and Painter (2008), quantitative research is used to describe variables, to examine relationships amongst variables and to determine cause-and-effect interactions between variables. It also involves the manipulation of numerical data through statistical procedures for the purpose of describing variables or assessing the magnitude and reliability of relationships among them (Burns & Grove, 2003). The current study was quantitative in nature in that it aimed at studying the prevalence and relationship between substance use and risky sexual behaviour among adolescents using statistical procedures.

However, this approach has been criticised for quantification of people's experiences, and Atieno (2009) argues that subjective experiences cannot be quantified or adequately explained in numerical terms. This approach has also been criticised for studying certain aspects of people's behaviours and beliefs without being cognisant of the context in which they occur. Taking into account the context in which behaviours and beliefs occur, assists in gaining a better understanding of the meaning attached to them (Neuman, 2000).

The current study is also a cross-sectional survey design. A cross-sectional design is regarded as the most convenient strategy because it allows the investigation of a large group of individuals at a specific period (Berk, 2007; Neuman, 2000). In the current study, a large group of adolescents was investigated only once. The cross sectional design also allows for the study of the relationship between two or more variables at one point in time (Neuman, 2000). This design is used in the current study because it is cost effective and less time consuming (Berk, 2007), given the fact that data is only collected once, and there are no follow-ups. However, the limitation of such design is the fact that it does not allow one to demonstrate change over a certain period of time (Bennie, 2003; Durrheim & Painter, 2008). Participants' circumstances and behaviours may change after data has been collected (Levin, 2006). Despite the limitation, the researcher opted to use it in the anticipation that it was going to provide the desired results.

Quantitative, cross-sectional research design uses structured tools to generate numerical data and statistics in organising, interpreting and presenting data (Creswell, 2014). In the present study, a survey is used as a method of generating data. According to Creswell (2014) a survey provides a quantifiable description of trends, attitudes or views of a population by studying a sample of that population, using structured interviews or questionnaires. Scheuren (2004) adds that the survey method is convenient when collecting data for making inferences on the population which is too large to observe directly. As is the case in the present study, it would be an unsurmountable task to collect data from all the adolescent population in tertiary institutions and all adolescents who are currently not studying and also unemployed.



### **3.3 Study Population**

Population refers to the whole set of individuals or elements that meet the researcher's inclusion criteria and from which the study sample will be drawn (Bhattacharjee, 2012; Burns & Grove, 2003). For the purpose of the current study, the study population refers to all adolescents who are registered at tertiary institutions and those who are currently not studying and unemployed in KwaZulu Natal. The target population refers to selected participants about whom the researcher would make inferences or generalisations and who meet the inclusion criteria (Polit & Beck, 2004). For the present study the target population refers to all adolescents registered at University of KwaZulu-Natal, Pietermaritzburg Campus, as well as those adolescents in Pietermaritzburg who are currently not studying at any formal educational institution and are unemployed.

### **3.4 Inclusion Criteria**

For adolescents to be recruited for this study, they had to meet certain criteria. Different inclusion criteria were set for the two sets of adolescents. To be included in the student adolescents sample, an individual had to meet the following requirements:

- Must be over the age of 18 years but not above 22 years
- Must be registered as a student at UKZN, Pietermaritzburg

To be included in the sample of adolescents who were neither studying nor employed, adolescents had to meet the following inclusion criteria:

- Must be over the age of 18 years but not above 22 years
- Must be residing in and around Pietermaritzburg
- Must have finished matric but not furthering their studies
- Must be fluent in written and spoken English
- Must be unemployed

### **3.5 Sampling Methods and Study Sample**

A convenience non-probability sampling technique was employed in the current study. According to Babbie and Mouton (2001), non-probability sampling technique entails a sampling procedure in which some elements of the target population have no equal

chance of selection. Convenience sampling is a method used in quantitative research to select people because of their availability, or easy access, particularly when there is no access to funding and other resources (Babbie & Mouton, 2001). This sampling procedure has some limitations. One of the major limitations of convenience sampling is that it has limited generalisability (Durrheim & Painter, 2008). Findings of studies that used convenient non-probability sampling methods encounter less generalisability of results (Terre Blanche, Durrheim & Painter, 2006; Babbie & Mouton, 2010). However, because convenience sampling is known for its cost effectiveness, the researcher decided to use it.

The sample for the current study was drawn from two sets of adolescents in Pietermaritzburg. In total, the sample comprised 400 participants. The first set comprised 200 adolescents who were attending University of KwaZulu Natal, Pietermaritzburg. The second set was made out of 200 adolescents who were not studying and who were unemployed. The university sample comprised mainly first and second year students. Convenience sampling was used to recruit 200 participants during tutorial periods at the university. When it comes to adolescents who were neither studying nor employed, convenience sampling procedure was again used to sample 200 adolescents who met the inclusion criteria. Certain areas around Pietermaritzburg were targeted for recruitment of participants who were neither studying nor employed. Areas in Pietermaritzburg that were visited for sampling and data collection include Imbali Township, Pietermaritzburg Central Business District (CBD), Northdale and Woodlands. Demographics of the study sample are explained in full detail at the beginning of chapter four below. The Pietermaritzburg CBD was targeted for data collection because it is the main hub for economic and retail activities in the city of Pietermaritzburg. As such, it is frequented by large numbers of people, including adolescents. The reason behind targeting Imbali, Northdale and Woodlands, is that they all share a common past of dire poverty, politically motivated inequality and socio-economic challenges. Most adolescents from these communities have to deal with challenges brought by adolescence in the face of psychosocial difficulties. Thus, in the current study, it was deemed appropriate to recruit adolescents from the above mentioned sites since they met the criteria for selection.

## **3.6 Data Collection**

### **3.6.1 Data collection instrument.**

In the current study, a questionnaire was used as a data collection instrument. The questionnaire was used because it was easy to administer and it also enabled collection of large amount of data in a short space of time (Neuman, 2000). The questionnaire used in the current study was adapted from the one used by Flisher et al. (1993) in their survey of risk-taking behaviours of school going adolescents in Cape Peninsula high schools. The original risk-taking behaviour questionnaire was designed to investigate six forms of risk-taking behaviours. It comprised demographic questions and was further divided into three parts, each part focusing on one form of risk-taking behaviour. Part 1 of the original questionnaire dealt with unintentional and intentional violent behaviour, and suicidal behaviour. Part 2 focused on substance abuse. Questions pertaining to participants' engagement in substances, such as alcohol, cigarettes, marijuana, solvents and intravenous drugs, are asked. Part 3 dealt with sexual behaviour and the use of protection against unplanned pregnancy and sexually transmitted diseases.

The adapted risk-taking behaviour questionnaire was divided into three parts. Part 1 dealt with demographic information of the participants. Specifically, it focused on whether or not the participant was studying, race, age, and gender. It is imperative to note that no personal identifying data, such as address, names, and telephone numbers, were required from the participants. Part 2 and 3 were taken from part 2 and 3 of the original risk-taking questionnaire designed by Flisher et al. (1993). Part 2 of the adapted risk-taking behaviour questionnaire dealt with substance use. However, only those items that are related to alcohol consumption, cigarette smoking and marijuana use were used in the current study. Part 3 of the adapted questionnaire focused on sexual behaviour. It contained items about participants' sexual behaviour patterns as well as sexual behaviour while under the influence of intoxicating substances.

It was mentioned in the inclusion criteria section that fluency in English language was one of the requirements for participation. This was said because the study questionnaire was written in English. The researcher assumed that there would be no need for translation

since all participants in the study had completed high school and that therefore they should be familiar with English. The copy of the adapted risk-taking behaviour questionnaire used in this study is attached in Appendix A.

### **3.6.2 Administration procedure of questionnaire.**

Upon receiving ethical clearance from the University of KwaZulu-Natal's Research Ethics Committee, various university tutors were approached to request their permission to administer the questionnaire towards the end of their tutorial periods. To make students feel at ease, only the researcher was present during administration of the questionnaire. The researcher began by introducing himself to participants and offered a brief presentation on the purpose of the research. Ethical issues, such as informed consent, voluntary participation and anonymity were discussed with the participants. Students were given an opportunity to ask questions when they sought clarity. Some students did ask questions, for an example, one asked if, other than academic purposes, what was another useful way that information obtained would be used. The researcher explained that information obtained could be used in informing interventions aimed at minimising adolescents' involvement in risk-taking behaviours. After ensuring that all participants were enlightened about the whole research process, they were again advised carefully to read the study information sheet and sign the consent form should they wished to participate in the study. No major difficulties were encountered when administering the questionnaire to participants.

When it comes to administering the questionnaire to adolescents who were not studying, data was collected at different times and days across all four research sites (Imbali, Pietermaritzburg CBD, Woodlands and Northdale). Research assistants were employed in each site in order to help with the recruitment of participants. The researcher was assisted by fellow psychology master's students in recruitment of participants and administration of the questionnaire. In order to enhance competency, briefing sessions were held at the university each time prior to going to a research site. Participants were recruited randomly from places that attract most people. Places visited include sports grounds, taxi ranks and shopping complexes. Before the administration of the questionnaire issues of informed consent were addressed. Adolescents were once again encouraged to seek

clarity or ask questions if the need arose. It took an average of 20-30 minutes to complete each questionnaire.

### **3.7 Reliability and Validity**

#### **3.7.1 Reliability.**

Reliability refers to the extent to which an experiment, test, or any measuring procedure yields the same result on repeated trials (Khothari, 2004; Babbie & Mouton, 2010). There are two methods of ensuring reliability of quantitative research instruments. The first one is to ensure that there is internal consistency across response items in the data collection instrument (Creswell, 2014). The second method is test-retest correlations, which is designed to ascertain if scores are stable over time when the instrument is administered the second time (Khothari, 2004). Reliability can be ensured by standardising the conditions under which data collection takes place. This is done by minimising external sources of variation and distraction such as fatigue or noise (Khothari, 2004). Reliability can also be ensured by carefully designing standard directions of data collection procedure from group to group with no variation and also by using trained personnel as data collection assistants (Neuman, 2000).

In the current study, internal consistency of the questionnaire was ensured by the use of the test-retest method. The questionnaire was administered to 6 adolescents on two consecutive times in order to test consistency of their responses to the questionnaire. It was discovered that their responses were stable on the two occasions. Thus the questionnaire had an acceptable level of internal consistency, appropriate for a survey questionnaire and was therefore reliable.

In order further to ascertain reliability of the adapted risk-taking behaviour questionnaire used in the current study, a statistical analysis using IBM SPSS version 21 was performed. Among other reliability testing methods, the Cronbach's Alpha coefficient was used to determine the questionnaire's reliability. The choice of using Cronbach's Alpha coefficient was made because it is the widely used test and relatively easier to perform compared to other reliability measures, such as the Guttman's reliability test (Benton, 2013).

According to Finchilescu (2010) Cronbach's Alpha coefficient should be at least 0.7 or above for a questionnaire or a scale to be useful and significant.

The questionnaire of the current study had Cronbach's Alpha coefficient of 0.610, although it was rather below the cut-off point, it was deemed reliable because the reliability value of 0.65 is adequate if the scale is to be used in comparing groups of people (Finchilescu, 2010), as was the case in the present study. Thus the questionnaire was declared reliable

### **3.7.2 Validity.**

Validity in questionnaire surveys is the extent to which the questions provide a true measure of what they are designed to measure (Neuman, 2000). Validity of the original questionnaire was assessed by asking participants if they had ever used fictitious drug called 'Debirsol'. All questionnaires for those who responded positively to the use of a fictitious drug were omitted for analysis. Flisher et al. (1993) add that the original questionnaire had undergone a series of validity tests, including pilot studies, in an attempt to ascertain validity. In the current study Debirsol was substituted by another fictitious drug called PASV230. However, no participant in the present study who responded positively to the fictitious drug question.

There are specific methods in the social sciences of assessing validity. These are:

- **Content validity:** refers to the extent to which the items in the data collection instrument adequately represent the domains of the construct being measured.
- **Concurrent/Predictive validity:** intended to ensure whether the results correlate with others.
- **Construct validity:** intended to ensure whether the items in the instrument measure the hypothetical construct of the study (Terre Blanche et al., 2006; Khothari, 2004).
- **Face validity:** refers to the appearance and authenticity of a measure. It functions as a determinant of content validity.

In the current study, the content and construct validity were ensured by checking items in the questionnaire against the study objectives to ensure that they measured all the elements to be studied. The fact that it has gained approval from expert judges, which is the University Ethics Committee, shows that the questionnaire has face validity, covers the important aspects of the construct being measured, and also measures what it is intended to measure. Therefore, the instrument was valid.

### **3.7.3 Generalisability of the findings of the study.**

Generalisability refers to the extent to which research findings can be applied to settings other than that in which they were originally tested (Neuman, 2000; Terre Blanche et al., 2006). The current study only focused on adolescents within the age range of 18-21 years, as such, the findings cannot be generalised to other segments of adolescents of adolescent population. Furthermore, the inclusion of one university (University of KwaZulu Natal) and one city (Pietermaritzburg), to a great extent, tampered with generalisability of the findings in the sense that the results cannot be generalised to other populations, places or universities elsewhere in the country except for the investigated group or places in the study. The study uses convenience sampling which results in the localisation of findings and inability to generalise with regard to the wider South African adolescent population. Thus, the findings of the current study may not be generalised due to lack of probability sampling, the age range of participants and the study setting. However, the findings of this study may be useful in shedding some light on expected trends with regard to adolescents' substance use and risky sexual behaviour.

### **3.7.4 Limitations of using questionnaire as data collection tool.**

The use of questionnaires in surveys has some limitations. One of such limitations is the validity of self-report measures (Fisher et al., 1993; Neuman, 2000). The limitation here is whether the adolescents were providing reliable responses to the questions posed, since some of the questions involved sensitive issues such as sexual behaviour. Fisher et al. (1993) (see also Neuman, 2000) maintain that, if a study requires participants to respond to questions relating to behaviours which could be deemed as socially deviant or illegal,

participants tend to respond in a manner that portrays them as 'good' and this may pose a threat to the overall validity of the findings of the study.

Fisher et al. (1993) further stress that threats to validity in measuring instruments, such as questionnaires, stem from two sources. The first one is under reporting, and it stems from fear on the part of participants. Participants may under report if they are afraid of giving responses that are not in line with normative standards of the society or that may display the nature and extent of their involvement in behaviours and practices that are considered to be illegal or despicable. The second threat identified by Fisher et al. (1993) is over reporting. It happens when a participant report to the extremes of the question asked. For instance, a person may be asked how frequently he or she engages in sexual intercourse and he or she responds by saying three times a week when in fact it is three times a month. To control for under and over reporting, participants in this study were asked if they had ever used a 'fictitious drug' known as P-ASV40. The responses of those who responded positively to this were going to be excluded from analysis. However, none of the participants responded positively to the 'fictitious drug' question.

### **3.8 Data Analysis**

#### **3.8.1 Data analysis tools and statistical procedures.**

Data analysis refers to the careful organisation and synthesis of research data in order to give meaning to data and the testing of research hypothesis (Johnson & Christensen, 2008; Terre Blanche et al., 2006). After data collection was completed, questionnaires were carefully examined. Spoiled questionnaires were excluded for final analysis. A questionnaire was rendered spoiled if, for example, the participant had selected two dichotomous categories in one question such that data entry would be impossible. After the exclusion of spoiled questionnaires, data were coded and entered for analysis on SPSS windows, version 21. In an attempt to control for missing values in some questionnaires, listwise deletion was used. Listwise deletion refers to the process of dropping the entire observation containing missing values. The use of listwise deletion in the current study ensured that questionnaires that were included for analysis were devoid of errors and missing data.



SPSS for windows was used to conduct descriptive statistics, cross tabulation tables, frequency tables and graphs. According to Neuman (2000) descriptive statistics give an overall picture of the data under consideration, making it easy to interpret and understand. In descriptive statistics, the demographic characteristics such as gender and age of research participants are described. The purpose of descriptive statistics is to enable a researcher to describe the properties of a particular data set (Burns & Grove, 2003), for example responses to a survey. It further enables the researcher to be able to explain numerical statements, using words, regarding the research data (Neuman, 2000).

The *Chi-square test* was used to determine relationships and differences between variables in the current study. This test was chosen because it is compatible for data measured in nominal and categorical scales (Pallant, 2005). A *Chi-square test* requires a *p* value of less or equal to .05 ( $P \leq .05$ ) for it to indicate and confirm statistically significant differences or relationships (Pallant, 2005). When the *Chi-square test* indicates statistically significant findings, this means that differences and associations between variables are less likely to be accounted for by sampling error or chance.

In order to analyze variables with continuous variables, for an example number of cigarettes smoked per day, the *Wilcoxon-Mann-Whitney test* was used. This test is a non-parametric equivalent of independent samples *t*-test. The *Wilcoxon-Mann-Whitney test* was used because data did not meet the inflexible assumptions of independent samples *t*-test. Like the *Chi-square test*, the *Wilcoxon-Mann-Whitney test* requires a *p* value of less or equal to .05 ( $P \leq .05$ ) for it to indicate and confirm statistically significant differences or relationships between variables, of which one has to be a continuous variable.

In predicting the probability of engagement in risk-taking behaviour, the logistic regression model was used. This model was chosen because some of the variables violated the assumption of normality, which is one of the assumptions of standard linear regression. To assess if the model was a good fit, Hosmer-Lemeshow *Goodness-of-fit-test* was used. According to this test, significance level above .05 is considered to indicate a good model fit. Odds ratios (OR) were used for predictions of the odds or probability, and they were reported with 95% confidence intervals (CI).

### **3.8.2 Comprehensive and detailed data analysis procedures.**

It is imperative to mention that some of the variables were broken down into two or more categories for clear data analysis. Variables which were assigned into categories were also given new names so that their presentation and interpretation would be easily understood. The risk-taking behaviour questions were answered with a 'yes' or 'no' answer. They comprised items from question five to ten of the study questionnaire. Items from question 5-7 were concerned with substance use (cigarettes, alcohol and dagga), while question 9 to 10 were interested in risky-sexual behaviour and relationship between risky-sexual behaviour and substance use, respectively. Below is a detailed explanation of sub-categories created on items.

Items 5a, 6a as well as 7a were concerned with the age of onset for cigarette smoking, alcohol use and dagga smoking respectively. The ages of 15 years and below were considered as early age of onset, while 16 to 18 years were considered as late age of onset for engagement in substances of interest (cigarette, dagga and alcohol). Item 5c was concerned with number of days of having smoked cigarette during the past month and participants' responses were categories as 'occasional smokers' for those who indicated to have smoked for 1-10 days during the past month. Another category was for 'heavy smokers', which was created for those who indicated to have smoked cigarette for 20 days and more during the past month.

Categories were also created for item 6c which was concerned with number of days of alcohol use during the past month. Two categories were created: those who indicated 1-3 days were categorized as occasional drinkers, while those who indicated 4 days or more were classified as heavy alcohol drinkers. Item 6c dealt with number of days of having more than five alcoholic drinks in past 14 days, those who indicated 1-3 days were categorized as moderate drinkers while those who indicated 4 days and more were categorized as heavy drinkers. Other categories were created for item number 7b and 7c. In item 7b, those who indicated that they had smoked dagga in the past year were categorized as regular dagga smokers. In item 7c, categories that were created were 'heavy dagga smokers' for those who indicated to have smoked dagga for five days or

more, while 'moderate smokers' was for those who reported to have smoked dagga for less than five days.

With regard to risky-sexual behaviour, item 9 was concerned with sexual behaviour. The sub-categories of item 9(a, b, c and e) were also broken into categories. Three categories were created for item 9a, which dealt with age of onset for sexual intercourse. These categories were: early adolescence onset (12-14 years), middle adolescence onset (15-16 years and late adolescence onset (17-18 years). In item 9b, which was concerned with the number of sexual partners in the past 12 months, two categories were created. The first category comprised those who indicated one to two sexual partners in the past 12 months, and they were categorized as engaging in low sexual risk. The second one comprised those who were categorized as engaging in high sexual risk. They were referred to as engaging in high sexual risk because they indicated to have had three or more sexual partners in the past 12 months.

Item 9c dealt with the frequency of sexual intercourse whereby participants had to indicate their most recent occasion of sexual intercourse. Three categories were created for this item. The first category comprised those who indicated that they had opted to abstain after being sexually active for some time. A second category was for those who indicated last having had sexual intercourse in a space of 0 to four weeks, and these were referred to as sexually active. The third one was for those who reported last having had sexual intercourse more than a month ago and they were classified as sexually inactive.

The final item of number 9 to be broken down into categories is item 9e, which was concerned with the use of any form of protection against diseases and pregnancy during the last occasion of sexual intercourse. The first category included those who indicated to have used protection, and they were categorized as engaging in low sexual risk. On the contrary, those who were in the second category were classified as engaging in high sexual risk because they denied using any form of protection.

### **3.9 Ethical Considerations**

The study received ethical clearance from the University of KwaZulu-Natal's Social Sciences and Humanities Research Ethics Committee. The ethical clearance copy is attached in Appendix B. It is significant for research, especially of an applied nature, to adhere to ethical practices when conducting research on human beings and animals (Bhattacharjee, 2012). To follow are the basic tenets of ethical practice that the current study adheres to and are also widely accepted by the empirical research community:

#### **3.9.1 Voluntary participation and informed consent.**

When conducting a research, participants should voluntarily participate without being forced to do so (Neuman, 2000). Participants should be aware that they have the right to drop out if the need arises. Informed consent must be received from research participants as an indication of their informed and voluntary participation; participants' autonomous decisions need to be respected (Capron, 1999; Donagan, 1977). In the current study, written consent was obtained from all the participants. Since all participants were over the age of 18 years, they were able to consent on their own behalf. The researcher explained to participants the details of the study in order to shed light on the issues contained in the consent forms. Key issues that were explained to participants included: anonymity and confidentiality, protection against actual or secondary harm and voluntary participation. Copies of study information sheet and informed consent form are attached in Appendix C and D, respectively.

#### **3.9.2 Anonymity and confidentiality.**

Anonymity implies that the researcher or readers of the study will not be able to link a given response to a particular participant (Neuman, 2000). It was necessary to ensure that anonymity was adhered to since the study involved sensitive issues such as adolescents' sexual behaviour. Confidentiality on the other hand refers to the situation where a researcher can identify the responses with a particular respondent, but treat it with confidence (Khothari, 2004). In terms of ensuring confidentiality and anonymity in the current study, the research participants were assured that the information gathered was

dealt with in confidence. They were also assured that measures were put into place to protect their identity. Participants were instructed not to write their names or any personally identifying information on the questionnaire. This ensured anonymity as the researcher was not going to be able to link any participant with his/her responses.

### **3.9.3 No harm to participants.**

In every study, a researcher must give proper information to participants regarding the benefits and possible harm linked with the study (Angell, 1997; Freedman, 1987). To safeguard against the possibility of secondary traumatising, the researcher arranged to refer participants to the University student counselling centre for debriefing in the event that this was necessary. Arrangements were made for participants recruited from townships and Pietermaritzburg CBD, to refer them to Child and Family Centre at the School of Psychology, UKZN, should the need arise. In addition, participants were advised that they were allowed to withdraw from the research should they feel uncomfortable continuing with the study. There was no point in the current research study where research participants needed to be referred for debriefing, although this service was readily available. There were no direct benefits for participating in the study. Participants were informed that their participation could possibly contribute towards efforts to gain more understanding in adolescents' challenges and their involvement to risk-taking behaviours.

## **3.9 Chapter Conclusion**

This chapter outlined the research design. It further explained sampling methods and demographic properties of a sample that was studied in the current study. It also presented the data collection and analysis procedures. The survey tool used to collect the information was named and described. The chapter further explained issues associated with reliability and validity related to the current research. Limitations of using questionnaire in a study were also discussed. Ethical considerations such as informed consent, possibility of harm, confidentiality and anonymity, related to the study were also included. The following chapter presents the research results and analysis of data.

## Chapter Four

### RESULTS

#### 4.1 Introduction

The current chapter presents the results of this study. The aim of the study is to compare the relationship between substance use and risky sexual behaviour among adolescents studying at a tertiary institution and adolescents who are not studying and are also unemployed. First, the demographic profile of the sample is presented, followed by descriptive analysis of the results. The results will be presented focusing on cigarette smoking, alcohol consumption and dagga smoking. This will be followed by findings on respondents' sexual behaviour and the presentation of results on the relationship between risky-sexual behaviour and substance use. Logistic regression model will be used to determine predictors of adolescents' substance use, risky-sexual behaviour and having sexual intercourse while under the influence of intoxicating substances. Tables and graphs will be used to aid the presentation of the results. It is important to highlight that analysis according to race was omitted in this study because the total sample was predominantly Black ( $n=302$ ; 76%).

#### 4.2 Demographic Profile of the Sample

A total of 400 participants took part in this study, and 203 (51%) were males and 197 (49%) females, while 200 (50%) were studying and 200 (50%) were not studying. The distribution of race shows that the majority of participants were Black ( $n = 302$ , 76%), followed by Indians ( $n = 45$ , 11%), Coloureds ( $n = 28$ , 7%) and ( $n = 25$ , 6%) Whites. Table 4.1 below provides a summary of demographic characteristics of the participants. It is worth noting that all male participants were Black.

Table 4.1 also depicts that the ages of participants ranged from 18 to 21 years. About 259 (65%) of participants were between the ages of 20 to 21 years. In the current study, these participants were referred to as *older adolescents*, while those between the

ages of 18 to 19 years were referred to as *younger adolescents*. About 141 (35%) fell within the category of younger adolescents.

**Table 4.1 Demographic profile of the sample**

Category	Black	Coloured	Indian	White	Total
Gender					
male	203(51%)	-	-	-	203(51%)
female	99(25%)	28(7%)	45(11%)	25(6%)	197(49%)
Age					
18-19	123(31%)	7(2%)	7(2%)	04(1%)	141(35%)
20-21	179(45%)	21(5%)	38(9%)	21(5%)	259(65%)
Life activity					
studying	136(34%)	21(5%)	20(5%)	23(6%)	200(50%)
not studying	166(41.5%)	7(2%)	25(6%)	02(.5%)	200(50%)

### 4.3 Cigarette Smoking Patterns

#### 4.3.1 Prevalence of cigarette smoking.

The prevalence of cigarette smoking was assessed by asking participants if they had ever smoked cigarettes. From the total sample, 158 (40%) reported to have ever smoked cigarettes, and 242 (60%) reported to have never ever smoked cigarettes. These results are summarily presented in Table 4.2 below. With regard to gender differences in having ever smoked cigarettes, the results suggest that 102 (65%) of those who reported ever to have smoked cigarettes were males, while 56 (35%) were females. Table 4.2 further depicts that, of those who reported ever to have smoked cigarettes, 71 (45%) were student adolescents while 87 (55%) were adolescents who were not studying.

Using a *Chi-square* analysis, gender differences in ever smoking cigarettes were found to be statistically significant,  $\chi^2(400) = 19.918, p < .001$ , suggesting that more male

than female participants have ever smoked cigarettes in the current study. A *Chi-square* analysis found no significant differences in ever having smoked cigarette between student participants and those who were not studying.

**Table 4.2 cigarette smoking patterns**

	<b>Ever smoked</b>	<b>Never smoked</b>
<b>All participants</b>	158(40%)	242(60%)
<b>Gender***</b>		
<b>male</b>	102(65%)	101(42%)
<b>female</b>	56(35%)	141(58%)
<b>Life activity</b>		
<b>studying</b>	71(45%)	129(53%)
<b>not studying</b>	87(55%)	113(47%)

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

Those who reported ever to have smoked cigarettes were further asked if they have smoked cigarettes in the past year. One hundred and one (64%) of the total sample reported to have smoked cigarette in past year and 57 (36%) reported they had not smoked cigarettes in the past year. These results are summarized in Table 4.3 below. An analysis according to gender showed that a larger proportion of male participants ( $n=76$ ; 75%), than female participants ( $n=25$ ; 25%), reported to have smoked cigarettes in the past year. A *Chi-square* analysis found differences between male and female participants in having smoked cigarettes in the past year to be statistically significant,  $\chi^2 (158) = .090, p < .001$ . This shows that significantly more males than females have smoked cigarettes in the past year. According to Table 4.3 below, 52 (66%) of those who reported to have smoked cigarette were student adolescents, while 49 (61%) were adolescents who were not studying. However, differences between student participants and those who were not studying were found not to be statistically significant,  $\chi^2 (158) = 4.852, p = .028$ , after a test of significance was conducted.



**Table 4.3 Have (never) smoked cigarettes in past year**

	Smoked cigarettes in past year	Never smoked cigarettes in past year
<b>All participants</b>	101(64%)	57(36%)
<b>Gender***</b>		
<b>male</b>	76(75%)	26(46%)
<b>Female</b>	25(25%)	31(54%)
<b>Life activity</b>		
<b>Studying</b>	52(51%)	19(33%)
<b>not studying</b>	49(49%)	31(67%)

\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

Participants were asked about the number of days in which they had smoked cigarettes in the past month. Those who had smoked for 20 days or more were then categorized as heavy smokers and those who had smoked cigarette for 10-19 days were categorized as regular smokers. Those who indicated to have smoked for about 10 days or less were categorized as occasional smokers. Please refer to Table 4.4 below.

About 62 (39%) of all study participants were classified as heavy smokers. Another 27 (17%) were classified as regular smokers. About 12 (8%) of all study participants also reported to have smoked for less than 10 days in the past month and they were therefore classified as occasional smokers. Fifty-seven (36%) participants reported never to have smoked cigarettes in the past month. An analysis according to gender showed that the majority of male participants fell within the category of heavy smokers (n=42; 27%), while about 22 (14%) of male participants were classified as regular smokers, and about 12 (8%) male participants were classified as occasional cigarette smokers. About 26(16%) of male participants who reported ever to have smoked cigarettes also reported never to have smoked cigarettes in the past month. When it comes to female participants, five (5%) were classified as regular smokers, while 20 (13%) were categorized as heavy smokers. Thirty-one (20%) reported not to have smoked cigarette in the past month. There were no female participants who fell within the category of occasional smoker in the present study. The *Wilcoxon-Mann-Whitney test* showed that differences between males and females

regarding smoking cigarette in more number of days were significant,  $U(158) = 2294.000$ ,  $z = -2.129$ ,  $p = .033$ .

Further analysis revealed that 24 (15%) of student participants, and 38 (24%) of those who were currently not studying, were classified as heavy smokers. A small proportion ( $n=5$ ; 3%) of participants who were currently not studying, and 22 (14%) of student participants were categorized as regular cigarette smokers. About six participants in both student participants and those who were currently not studying (4% and 4% respectively) were classified as occasional cigarette smokers.

Further analysis according to gender showed that 19(12%) of student participants and 38(24%) of participants who were not studying reported not to have smoked cigarettes in the past month. However, the *Wilcoxon-Mann-Whitney test* found these differences between student participants and those who were not studying not statistically significant,  $U(158) = 2744.000$ ,  $z = -1.255$ ,  $p = .209$ .

**Table 4.4 Number of days smoked in the past month**

	<b>Never smoked cigarette in past month</b>	<b>Occasional smoker below 10 days</b>	<b>Regular smoker 10-19 days</b>	<b>Heavy Smoker 20 days and above</b>
<b>All participants</b>	57(36%)	12(8%)	27(17%)	62(39%)
<b>Gender*</b>				
<b>male</b>	26(16%)	12(8%)	22(14%)	42(27%)
<b>female</b>	31(20%)	-	05(3%)	20(13%)
<b>Life activity</b>				
<b>studying</b>	19(12%)	06(4%)	22(14%)	24(15%)
<b>not studying</b>	38(24%)	06(4%)	05(3%)	38(24%)

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

In order to gain more insight into cigarette smoking patterns, participants were asked to indicate the number of cigarettes smoked per day during the past month. The number of cigarettes smoked per day ranged from 4 to 20 cigarettes, with the average of 8.35 ( $SD = 7.700$ ;  $median = 10$ ).

The *Wilcoxon-Mann-Whitney test* was conducted to determine whether there were differences in the number of cigarettes smoked per day between male and female participants, and also between student participants and those who were not studying. The test showed statistically significant differences,  $U(158) = 1811.500$ ,  $z = -3.963$ ,  $p < .001$ , between male and female participants. Thus suggesting that male participants have smoked more cigarettes in a day compared to their female counterparts.

When comparing differences in the number of cigarettes smoked in the past month, between student participants and those who were not studying, *Wilcoxon-Mann-Whitney test* showed that differences between the two groups were statistically significant,  $U(158) = 2347.500$ ,  $z = 2.704$ ,  $p = .007$ , suggesting that student participants have smoked more cigarettes in the past month than those who were not studying.

#### **4.3.2 Age of onset for cigarette smoking.**

The minimum age of onset for cigarette smoking among the whole sample was 12 years, with 15.44 years being the mean age of smoking onset ( $Median = 16$  years;  $SD = 1.299$ ). In the current study those who reported their age of onset to be 15 years and below, were classified as having started during early adolescence. Those who indicated 16 years and above as their age of smoking cigarette onset were classified as having started during late adolescence. The majority ( $n = 86$ , 54%) of all participants who have ever smoked cigarettes reported their age of cigarette smoking onset as late adolescence, while about 72(46%) indicated early adolescence as their age of cigarette smoking onset.

An analysis according to gender showed that the age of onset for cigarette smoking was 12 years for both male and female participants. Table 4.5 below shows that, of the 46% who indicated to have started smoking cigarette during early adolescence, 44(28%) were males while 28(18%) were females. Results further show that, of participants who indicated

late age of onset for cigarette smoking, 58(36%) were male participants while 28(18%) were females. The *Wilcoxon-Mann-Whitney test* showed that differences between male and female participants, on age of smoking cigarette onset, were statistically significant,  $U(158) = 2170.000, z = -2.576, p = .010$ , thus suggesting that significantly more males than females started smoking during early adolescence.

An analysis of age of onset for cigarette smoking according to life activity revealed that the majority of participants who were not studying ( $n=48; 30\%$ ) reported early onset of cigarette smoking, compared to 24 (15%) of student participants. About 47 (30%) of student participants, compared to 39 (25%) of participants who were not studying reported their age of cigarette smoking onset as late adolescence. The *Wilcoxon-Mann-Whitney test* showed that differences between the two groups were statistically significant,  $U(158) = 2199.500, z = 3.211, p = .001$ , suggesting that more participants who were not studying than student participants have started smoking cigarette during early adolescence.

**Table 4.5 Age of onset for cigarette smoking**

	Early adolescence	Late adolescence
All participants	72(46%)	86(54%)
Gender*		
Male	44(28%)	58(36%)
Female	28(18%)	28(18%)
life activity*		
Studying	24(15%)	47(30%)
not studying	48(30%)	39(25%)

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

## 4.4 Alcohol Consumption

### 4.4.1 Alcohol consumption patterns.

In order to assess alcohol consumption patterns, participants in the present study were asked if they had ever used alcohol. Table 4.6 below indicates that 216(53.5%) of the whole sample reported ever to have used alcohol. Analysis according to gender revealed

that 125(58%) of those who have ever used alcohol were male participants while 91 (42%) were females. Results further showed that 111 (55%) of those who indicated ever to have used alcohol were student adolescents, while 105(53%) were those who were currently not studying.

A *Chi-square* analysis revealed statistically significant gender differences,  $\chi^2 (400) = 9.525, p = .002$ , which suggests that more males than females in the current study have ever consumed alcohol. However, significance analysis on life activity found no statistically significant differences between student participants and those that were not studying in having ever consumed alcohol,  $\chi^2 (400) = .362, p = .547$ .

**Table 4.6 Alcohol consumption patterns**

	Ever used alcohol	Never used alcohol
<b>All participants</b>	216(53.5%)	184(46.5%)
<b>Gender*</b>		
<b>Male</b>	125(58%)	78(42%)
<b>female</b>	91(42%)	106(58%)
<b>Life activity</b>		
<b>studying</b>	111(55%)	81(45%)
<b>not studying</b>	105(53%)	95(47%)

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

Participants who indicated ever to have used alcohol were further probed if they had used alcohol during the past year. Table 4.7 below shows that 118(55%) of total sample indicated to have used alcohol in the past year. An analysis according to gender found that the majority of those who reported to have used alcohol in the past year were male participants ( $n=83$ ; 70%), while 35(30%) were their female counterparts. The results also show that a large proportion of adolescents who were currently not studying ( $n=63$ ; 53%) reported to have used alcohol in the past year more than their studying counterparts ( $n=55$ ; 47%).

A *Chi-square* analysis found that differences in having used alcohol in the past year between male and female participants in the current study were statistically significant,  $\chi^2(216) = 16.584, p < .001$ . This means that more males than females have used alcohol during the past year in the current study. However, a *Chi-square* analysis found no significant differences between student participants and those who were not studying in having used alcohol in the past year,  $\chi^2(216) = 2.378, p = .123$ .

**Table 4.7 Used alcohol in past year**

	Used alcohol in past year	Never used alcohol in past year
<b>All participants</b>	118(55%)	97(45%)
<b>Gender*</b>		
<b>male</b>	83(70%)	42(43%)
<b>female</b>	35(30%)	56(57%)
<b>Life activity</b>		
<b>studying</b>	55(47%)	56(57%)
<b>not studying</b>	63(53%)	42(43%)

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

To further assess alcohol consumption patterns, those who reported to have used alcohol were further asked to indicate the number of days in which they used alcohol in the past month. Note that categories were created for better presentation of findings, the original item used a ratio scale. The number of days of alcohol use during the past month ranged from 1 to 6, with the average of 1.72 days (*Median* = 2; *SD* = 1.610). Table 4.8 below indicates that 75(35%) of those who reported to have used alcohol did not use it in the past month. One-hundred-and-three (47%) of the whole sample reported to have used alcohol for 1-3 days during the past month. These participants were classified as occasional drinkers. Thirty-eight (18%) of the total sample were classified to be heavy drinkers, since they indicated to have used alcohol for 4 or more days in the past month.

Gender analysis of the results, as presented in Table 4.8, revealed that 30(38%) of male participants and 37(41%) females were found not to have used alcohol in the past

month. Fifty-eight (46%) of male participants compared to 45(49%) of females were found to be occasional alcohol users. Further gender analysis showed that 29(24%) of male compared to 9(10%) of female participants were classified as heavy drinkers.

When comparing student participants and those that were currently not studying, the results of the present study revealed that 36(33%) of student adolescents compared to 39(37%) of participants who were not studying, reported not to have used alcohol in the past month. Fifty-eight (52%) of student participants and 45(43%) of those who were currently not studying were classified as occasional drinkers. Seventeen (15%) of student participants and 21 (20%) participants who were currently not studying were classified as heavy alcohol drinkers.

The *Wilcoxon-Mann-Whitney test* was conducted to determine whether there were differences in the number of days of having used alcohol in the past month between male and female participants, and also between student participants and those who were not studying. The results were both not statistically significant.

**Table 4.8 Number of days in which alcohol was used in the past month**

	<b>Never used alcohol in past month</b>	<b>1-3 days (occasional drinker)</b>	<b>4 or more days (heavy drinker)</b>
<b>All participants</b>	75(35%)	103(73%)	38(27%)
<b>Gender</b>			
<b>male</b>	38(30%)	58(46%)	29(24%)
<b>female</b>	37(41%)	45(49%)	09(10%)
<b>Life activity</b>			
<b>studying</b>	36(33%)	58(52%)	17(15%)
<b>not studying</b>	39(37%)	45(43%)	21(20%)

\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

In terms of the number of days of having more than five alcoholic drinks on one occasion in the past 14 days. Table 4.9 below shows that about 95(44%) were found to have

had more than five alcoholic drinks in one occasion for 1-2 days, during the past 14 days, and they were classified as moderate alcohol drinkers in the current study. About 46 (21%) of those who reported to have used alcohol were classified as heavy alcohol drinkers since they indicated to have had more than five alcoholic drinks on one occasion for more than four days in the past 14 days.

When analyzing the results of having more than five alcoholic drinks on one occasion, in the past 14 months, in terms of gender, 38(30%) of male and 37(41%) of female participants denied having used alcohol in the past 14 days, while 58(46%) of male compared to 37(40%) of female participants were classified as moderate alcohol drinkers. Further analysis of the results according to gender revealed that 29(23%) of males compared to 17(19%) of females were heavy alcohol drinkers.

An analysis according to life activity showed that, on the one hand 36(32%) of student participants and 39(37%) of participants who were not studying, denied having used alcohol in the past 14 days. On the other hand, 22(23%) of student participants compared to 21 (20%) of participants who were not studying were classified as heavy alcohol drinkers. Results in Table 4.9 below further show that 50(45%) of student adolescents compared to 45(43%) were classified as moderate alcohol drinkers.

Further analysis shows that 50(67%) of student participants and 45(68%) of those who were currently not studying were classified as moderate alcohol drinkers. When it comes to binge alcohol drinking, 25(33%) of student participants and 21 (32%) of those who were currently not studying were found to be binge drinkers.

The *Wilcoxon-Mann-Whitney test* was performed to determine whether there were significant differences in the number of days of having more than five alcoholic drinks on one occasion in the past 14 months between genders, and also between student participants and those who were not studying. According to the results of the test, these differences according to gender and life activity were not statistically significant,  $U(216) = 5415.500$ ,  $z = -.620$ ,  $p = .535$ .



**Table 4.9 Number of days of having more than five alcohol drinks in past 14 days**

	<b>Never had a drink in past 14 days (light drinker)</b>	<b>Had more than five alcohol drinks on one occasion on 1-3 days (moderate drinker)</b>	<b>Had more than five alcohol drinks on one occasion on 4 or more days (heavy drinker)</b>
<b>All participants</b>	75(35%)	95(44%)	46(21%)
<b>Gender</b>			
<b>male</b>	38(30%)	58(46%)	29(23%)
<b>female</b>	37(41%)	37(40%)	17(19%)
<b>Life activity</b>			
<b>studying</b>	36(32%)	50(45%)	22(23%)
<b>not studying</b>	39(37%)	45(43%)	21(20%)

\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

#### **4.4.2 Age of onset of alcohol consumption.**

For easy presentation of results, two categories were created for age of onset for alcohol use. The age of 15 years and below was categorized as early adolescence, while 16-18 years was categorized as late adolescence. The results of the current study suggest that the minimum age of onset for alcohol use among the total sample was 12 years, with 14.75 as a mean age (*Median* = 15; *Mode* = 15; *SD*=1.077). Among those who reported ever to have used alcohol in the current study, 157(73%) indicated their age of onset for alcohol use as early adolescence, while 59(27%) indicated having started using alcohol for the first time during late adolescence. Table 4.10 below presents summarized results of age of onset for alcohol use.

Further analysis showed that, of those who indicated alcohol use during early adolescence, 94(43%) were males while 63(30%) were female participants. Results also depict that, of the 27% who indicated late adolescence as their age of onset for cigarette smoking, 31 (14%) were male participants while 28(13%) were females. The *Wilcoxon-Mann-*

Whitney test showed that differences between the two genders in the age of onset for alcohol use were not statistically significant,  $U(216) = 5280.500, z = .936, p = .349$ . Furthermore, when the results of age of onset for alcohol use were assessed according to life activity, they revealed that 48(22%) of student participants, compared to 11(5%) of those who were not studying initiated alcohol use during their late adolescence. Sixty-three (30%) of student participants and 94(43%) of those who were not studying initiated alcohol use during their early adolescence. The Wilcoxon-Mann-Whitney test showed significant differences between the two life activity groups,  $U(216) = 4212.500, z = 3.62, p < .001$ , thus suggesting that more participants who were not studying than student participants had started using alcohol during early adolescence.

**Table 4.10 Age of onset for alcohol use**

	Early adolescence	Late adolescence
All participants	157(73%)	59(27%)
Gender		
male	94(43%)	31(14%)
female	63(30%)	28(13%)
Life activity*		
studying	63(30%)	48(22%)
not studying	94(43%)	11(5%)

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

## 4.5 Dagga Smoking

### 4.5.1 Prevalence of dagga smoking.

The prevalence of dagga smoking was assessed by asking participants if they had smoked dagga. Table 4.11 below shows that 90 (22.5%) participants have ever smoked dagga on its own in their lifetime. Of the 22.5% participants who reported ever to have smoked dagga on its own in their lifetime, 49 (12.3%) were males while 41 (10.3%) were females. However, these differences were not statistically significant,  $\chi^2(400) = .634, p = .426$ .

When the results were analyzed according to life activity, they showed that 48 (12%) of participants who have ever smoked dagga were student adolescents, while 42 (10.5%) were participants who were not studying, see Table 4.11 below. These differences were not statistically significant,  $\chi^2 (1, N= 400) = .516, p = .472$ . About 51 (57%) of those who have ever smoked dagga indicated that they had smoked it in the past year. In terms of gender, 30 (59%) of male and 21 (41%) of female participants had smoked dagga in the past year. These differences were, however, not statistically significant,  $\chi^2 (90) = .910, p = .340$ .

Results in Table 4.11 below further show that among student participants, 28(55%) reported to have smoked dagga in the past year, compared to 23(45%) of participants who were not studying. However, these findings were also not statistically significant,  $\chi^2 (90) = .116, p = .733$ .

**Table 4.11 Dagga smoking patterns**

	<b>Have ever smoked dagga</b>	<b>Never smoked dagga</b>	<b>Have smoked dagga in past year</b>
<b>All</b>	90(22.5%)	310(77.5%)	51 (57%)
<b>Participants</b>			
<b>Gender</b>			
<b>male</b>	49(12.3%)	154(38.5%)	30(59%)
<b>female</b>	41(10.3%)	156(39%)	21(41%)
<b>Life Activity</b>			
<b>studying</b>	48(12%)	152(38%)	28(55%)
<b>not studying</b>	42(10.5%)	158(39.5%)	23(45%)

\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

Gender analysis showed that 28(57%) of males, compared to 25(61%) of females, who reported to have smoked dagga, denied having smoked dagga in the past week. About eight (19.5%) of female participants and 19(39%) of males admitted to have smoked dagga for more than five days in the past month. When results of the number of days in which participants smoked dagga in the past month were analyzed according to life activity, Table 4.12 depicts that 34(71%) of student participants and 19(45%) of those who were not studying denied having smoked dagga in the past week. Results further suggest

that 9(19%) of student participants and 18(43%) of participants who were not studying, reported to have smoked dagga for less than five days. According to the *Wilcoxon-Mann-Whitney test*, differences between student participants and those who were not studying in the number of days of having smoked dagga in the past week were statistically significant,  $U(90) = 711.000$ ,  $z = -2.699$ ,  $p = .007$ . This suggest that participants who were not studying have smoked on more of days than student participants in the current study.

**Table 4.12 Number of days of dagga smoking in the past week**

	<b>1-4 days (moderate dagga smoking)</b>	<b>5 days or more (heavy dagga smoking)</b>	<b>Never smoked dagga in past week</b>
<b>All participants</b>	10(27%)	27(51%)	53(59%)
<b>Gender</b>			
<b>male</b>	02(4%)	19(39%)	28(57%)
<b>female</b>	08(19.5%)	08(19.5%)	25(61%)
<b>Life activity***</b>			
<b>studying</b>	05(10%)	09(19%)	34(71%)
<b>not studying</b>	05(12%)	18(43%)	19(45%)

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

Dagga smoking patterns were further assessed by asking participants to indicate their daily pattern of dagga smoking. Participants had to indicate if they smoked daily or not. According to Table 4.13 below, 53(59%) of those who reported having smoked dagga admitted to smoking dagga daily, while 37(41%) denied smoking dagga daily. Analysis of gender differences in daily dagga smoking patterns revealed that, of those who reported daily dagga use, 28(31%) were male participants, while 25(28%) were females. However, these gender differences were not statistically significant,  $\chi^2(90) = .135$ ,  $p = .713$ , when *Chi-square test* was performed.

When the results of daily dagga smoking patterns were analyzed according to life activity, they revealed that of the participants who indicated daily dagga smoking, 34(38%) were student participants and 19(21%) were participants who were not studying.

These differences were statistically significant,  $\chi^2 (90) = 6.061, p = .014$ , suggesting that student participants' daily dagga smoking patterns are greater than that of their peers who were not studying.

**Table 4.13 Daily dagga smoking patterns**

	Smoke dagga everyday	Never smoke dagga everyday
All participants	53(59%)	37(41%)
Gender		
male	28(31%)	21(23%)
female	25(28%)	16(18%)
Life activity*		
studying	34(38%)	14(16%)
Not studying	19(21%)	23(27%)

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

#### 4.5.2 Age of onset for dagga smoking

In order to assess the age of onset for dagga smoking, participants were asked as to how old were they when they smoked dagga for the first time. Two categories were created for the age of onset for dagga smoking. The first category included participants who indicated their age of dagga smoking onset to be 15 years and below. This category was labeled as early adolescence. The second category was labeled as late adolescence since it comprised of all those who indicated their age of onset for dagga smoking to be 16 years and above.

The results of the current study suggest that the minimum age of smoking dagga onset in the total sample was 15 years, with 16.17 as a mean ( $Median = 16; SD = .768$ ). The findings of this research show that 70(78%) of all participants who have smoked dagga initiated its use in their late adolescence, while 20(22%) initiated its use in their early adolescence. These results are presented in Table 4.14 below.

When the results of age of onset for dagga smoking were analyzed according to life activity, they showed that 13(27%) of student participants compared to 7(8%) of those who were not studying smoked dagga for the first time when they were in early adolescence. About 35(39%) in both life activity groups initiated dagga smoking in their late adolescence. See Table 4.14 below. The *Wilcoxon-Mann-Whitney test* found differences, between student participants and those who were not studying, in age of onset for dagga smoking to be statistically significant,  $U(90) = 745.500, z = 2.274, p = .023$ . This means that a significantly larger proportion of student participants started smoking dagga for the first time when they were in their late adolescence.

**Table 4.14 Age of onset for dagga smoking**

	Early adolescence	Late adolescence
All participants	20(22%)	70(78%)
Gender***		
male	-	49(54%)
female	20(22%)	
Life activity*		
studying	13(27%)	35(39%)
not studying	7(8%)	35(39%)

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

## 4.6 Risky-Sexual Behaviour

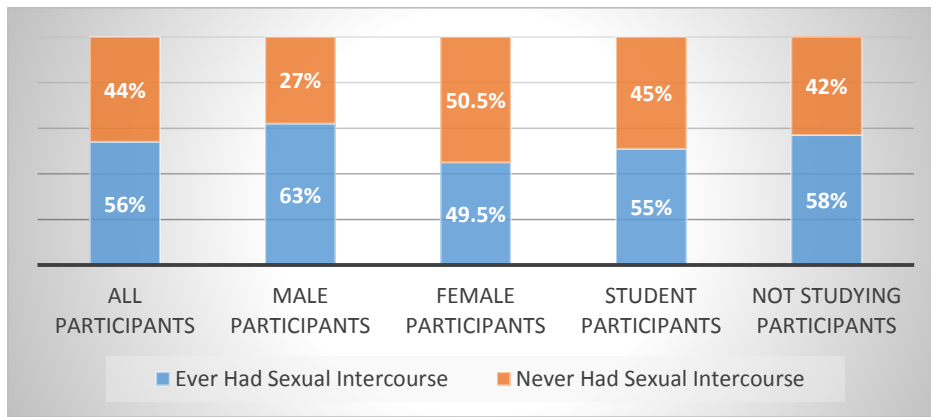
### 4.6.1 Patterns of engagement in sexual activities.

In the present study, patterns of engagement in sexual activities were assessed by first asking participants if they had ever had sexual intercourse. Among the total sample of the current study, 224 (56%) admitted to ever having had sexual intercourse. See Figure 4.1 below for graphic presentation of the results. An analysis according to gender, revealed that 127 (63%) of male participants and 97 (49.5%) of females reported ever having had sexual intercourse. The gender differences, using the *Chi-square* test, were found to be

statistically significant,  $\chi^2 (400) = 7.202, p = 0.007$ . This suggests that more male participants have ever had sexual intercourse than their female peers.

When the results were analyzed according to life activity, 109 (55%) of student participants and 115 (58%) of those who were not studying indicated to have ever had sexual intercourse. These results were, however, not statistically significant,  $\chi^2 (400) = .365, p = 0.546$ .

**Figure 4.1 A graph showing Sexual Behaviour Patterns**



\*Gender differences in ever had sexual intercourse significant at .05 level

Participants were asked about the number of sexual partners during the past 12 months (year). For easy data analysis, responses of participants were classified as either displaying low sexual risk-taking, for those who reported to have had two or less sexual partners during the past 12 months, or high sexual risk-taking, for those who indicated having had three or more sexual partners during the past 12 months. Of those who reported ever having had sexual intercourse, 145(65%) reported having had two or more sexual partners during the past 12 months, thus being classified as high sexual risk takers, and 79(35%) were classified as low sexual risk takers, please see Table 4.15 below for these results. An analysis according to gender regarding the number of sexual partners in the past 12 months revealed that a large proportion ( $n = 99, 44\%$ ) of those who were classified as high sexual risk-takers were male participants, and 46(21%) were females. These differences were statistically significant,  $\chi^2 (224) = 22.454, p < .001$ , suggesting that more male participants than females were classified as high sexual risk takers.

An analysis of results for the number of sexual partners during the past 12 months, according to life activity, revealed that 77(34%) of student participants and 68(31%) of those who were not studying, were found to be high sexual risk takers because they indicated three or more sexual partners, see Table 4.15 below. Nevertheless, these findings were found not to be statistically significant,  $\chi^2 (224) = .512, p = .474$ .

**Table 4.15 number of sexual partners in the past 12 months**

	<b>1-2 sexual partners (low sexual risk)</b>	<b>3 or more sexual partners (high sexual risk)</b>
All participants	79(35%)	145(65%)
Gender***		
male	28(12%)	99(44%)
female	51(23%)	46(21%)
Life activity		
studying	41(18%)	68(31%)
not studying	38(17%)	77(34%)

\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

In order to assess the frequency of sexual intercourse, participants were asked to indicate the last time they had had sexual intercourse. Three categories were created for better data presentation. The first category comprised those participants who were categorized as having decided to abstain. The second category comprised participants who indicated last having had sexual intercourse more than a month ago. These participants were classified as engaging in sexual intercourse occasionally. The final category included those who indicated last having had sexual intercourse within the last four weeks, and they were classified as sexually active. Please see Table 4.16 below for a summary of findings.

Among participants who indicated ever having had sexual intercourse, 33(15%) have decided to abstain, while 47(21%) were having sexual intercourse occasionally. The majority (n = 144, 64%) of participants were categorized as sexually active. Gender analysis of the findings on frequency of sexual intercourse revealed that 20(9%) of males, compared to 13(6%) of females abstained from sexual intercourse. Thirty (13%) female compared to



17(8%) male participants were classified as having sexual intercourse occasionally. More males (n = 90, 40%) than females (n = 54, 24%), in this study, were classified as sexually active. These gender differences on the frequency of sexual intercourse were found to be statistically significant,  $\chi^2 (224) = 10.247, p = .006$ . Thus meaning that male participants in the current study are more sexually active compared to their female counterparts.

An analysis of frequency of sexual intercourse findings according to life activity showed that no participant, among those who were not studying, was classified in the category of abstaining from sexual intercourse, while 33(15%) of student participants were classified as abstaining, see Table 4.16 below. A large proportion of participants who were not studying (n = 83, 37%), compared to student participants (n = 61, 27%) were classified as sexually active. These differences among student participants and those who were not studying on the frequency of sexual intercourse were found to be statistically significant,  $\chi^2 (224) = 42.380, p < .001$ . This suggests that participants who were not studying in the current study are more sexually active compared to their studying peers.

**Table 4.16 frequency of sexual intercourse**

	<b>Decided to abstain</b>	<b>More than a month ago (occasional)</b>	<b>1-4 weeks (sexually active)</b>
All participants	33(15%)	47(21%)	144(64%)
Gender*			
male	20(9%)	17(8%)	90(40%)
female	13(6%)	30(13%)	54(24%)
Life activity*			
studying	33(15)	15(7%)	61(27%)
not studying	-	32(14%)	83(37%)

\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

Moreover, participants who reported ever having had sexual intercourse were further asked if they had known their sexual partners for more than seven days during the last occasion of sexual intercourse. According to Table 4.17 below, of those participants who have ever had sexual intercourse, (n=180; 80%) indicated that they had known their sexual partners for more than seven days during their last occasion of sexual intercourse. These participants were classified as low sexual risk takers. However, 44 (20%) denied

knowing their sexual partners for more than seven days during their last sexual intercourse. These participants were regarded as high sexual risk takers.

An analysis within gender showed that 82 (84%) of female participants had known their sexual partners for more than seven days prior to their sexual encounter, compared to 15 (16%) who did not. Among male participants, 98 (77%) reported to have known their sexual partner for more than seven days during the last occasion of sexual intercourse, while 29 (23%) denied knowing the sexual partner for more than 7 days in this regard. However, significance analysis found no significant differences,  $\chi^2 (224) = 1.893, p = .169$ , among male and female participants when it comes to having known sexual partner for more than 7 days before sexual intercourse.

When the results were analyzed according to life activity, they showed that 25 (23%) of student participants, compared to 19 (16%) of participants who were not studying did not know their sexual partner for more than 7 days on the last occasion they had sexual intercourse, see Table 4.13 below. However, these findings were not statistically significant,  $\chi^2 (224) = 1.459, p = .227$ .

The use of protection against diseases and unwanted pregnancy during sexual intercourse was also assessed. Table 4.17 below shows that the majority (n=141; 63%) of the participants in this study reported having used protection against pregnancy and diseases during their last occasion of sexual intercourse. About 84 (37%) of the total sample reported not having used any protection during their last sexual intercourse. These participants were classified as high sexual risk takers.

When the results for the use of protection against pregnancy and diseases were analyzed according to gender, they revealed that more males 53 (42%), than females (n = 30, 31%) were found to be high sexual risk takers since they indicated that they did not use protection during their last sexual intercourse. while 74 (58%) confirmed having used protection. A *Chi-square* analysis found differences in the use of protection between males and females not statistically significant,  $\chi^2 (224) = 2.753, p = .097$ .

Among student participants, 79 (73%) indicated having used protection during their last sexual intercourse (Table 4.17 below), while 30 (27%) did not. Those who reported not having used protection during their last sexual intercourse among participants who were not

studying were 53 (46%), while those who indicated having used protection during their last sexual intercourse were 62 (54%), see Table 4.16 below. A *Chi-square* analysis revealed statistically significant differences between student participants and those who were not studying,  $\chi^2 (224) = 8.268, p = .004$ . This means that the majority of high risk takers, who inconsistently use protection during sexual intercourse, came from those participants who were not studying in the current study.

**Table 4.17 Known sexual partner for more than seven days before sexual intercourse and the use of protection while having sexual intercourse**

	<b>Known Sexual Partner For More Than 7 Days</b>	<b>Did Not Know Sexual Partner For More Than 7 Days</b>	<b>Used Protection During last Sexual Intercourse</b>	<b>Did Not Use Protection During Last Sexual Intercourse</b>
<b>All Participants</b>	180 (80%)	44 (20%)	141 (63%)	84 (37%)
<b>Gender</b>				
<b>Male</b>	98 (77%)	29 (23%)	74 (58%)	53 (42%)
<b>Female</b>	82 (84%)	15 (16%)	67 (69%)	30 (31%)
<b>Life activity*</b>				
<b>Studying</b>	84 (77)	25 (23%)	79 (73%)*	30 (27%)*
<b>not studying</b>	96 (84%)	19 (16%)	62 (54%)*	53 (46%)*

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

#### **4.6.2 Age of onset for sexual intercourse.**

Participants' age of onset for sexual intercourse was broken into three categories. The first category was referred to as the early adolescence onset of sexual intercourse, and included those who indicated their age of onset for sexual intercourse to be between the ages of 10-14 years. The second category contained those who indicated the ages of 15-16 years as their age of sexual course onset. People in this category were deemed to have had middle adolescence onset of sexual intercourse. The third category was referred to as

the late adolescence onset of sexual intercourse onset, and included those participants who reported their age of onset for sexual intercourse as between the ages of 17-18 years.

The results of the present study revealed that the minimum age of sexual intercourse onset was 12 years, with 15.14 years as a mean age of onset. According to Table 4.18 below, 99 (44%) participants who have ever had sexual intercourse recorded middle adolescence as their age of sexual intercourse onset, 72 (32%) reported early adolescence, while 53 (24%) indicated late adolescence as their age of sexual intercourse onset.

When analyzing the results for sexual intercourse onset, according to gender, a large proportion of male participants ( $n=62$ ; 28%) reported middle adolescence as their age of onset for sexual intercourse, while for females, the majority ( $n = 37$ , 17%) initiated sexual intercourse in their middle adolescence, refer to Table 4.18 below for the summary of these findings. The *Wilcoxon-Mann-Whitney test* found gender differences in age of onset for sexual intercourse to be statistically significant,  $U (224) = 5335.500$ ,  $z = -1.745$ ,  $p = .081$ , suggesting that more male participants had started engaging in sexual intercourse significantly earlier than their female counterparts.

When data were analyzed according to life activity, Table 4.18 below shows that the majority of student participants ( $n=47$ ; 21%) reported their age of sexual intercourse onset as early adolescence, compared to 25 (11%) of those who were not studying. Results further show that 57 (25%) of participants who were not studying indicated their age of sexual intercourse onset as middle adolescence, while it was 42 (19%) for student participants. Lastly, according to Table 4.17 below, 33 (15%) of participants who were not studying and 20 (9%) of student participants indicated late adolescence as their age of onset for sexual intercourse.

The *Wilcoxon-Mann-Whitney test* found differences between student participants and those who were not studying, in age of onset for sexual intercourse to be statistically significant,  $U (224) = 4053.500$ ,  $z = -4.647$ ,  $p < .001$ . This means that a significantly larger proportion of student participants started engaging in sexual intercourse earlier than their peers who were not studying.

**Table 4.18 Age of onset for sexual intercourse**

	<b>Early adolescence (12-14 years)</b>	<b>Middle adolescence(15-16 years)</b>	<b>Late adolescence(17-18 years)</b>
All participants	72(32%)	99(44%)	53(24%)
Gender*			
Male	41(18%)	62(28%)	24(11%)
female	31(14%)	37(17%)	29(13%)
Life activity***			
studying	47(21%)	42(19%)	20(9%)
not studying	25(11%)	57(25%)	33(15%)

\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

#### **4.7 Relationship between Substance Use and Risky-Sexual Behaviour**

In order to assess the relationship between substance use and risky-sexual behaviour in the present study, participants were asked whether they ever had sexual intercourse while under the influence of intoxicating substances (alcohol, dagga and cigarette). They were also asked whether substances influenced their choice to have sexual intercourse while intoxicated. The follow up question was whether those who have ever had sexual intercourse while intoxicated, used any form of protection against diseases or pregnancy in the last occasion of sexual intercourse while intoxicated.

Among the participants who reported to be sexually active and having used substances, 76 (34%) reported ever to have had sexual intercourse while intoxicated, and 148 (66%) denied ever having had sexual intercourse while intoxicated. The graph in Figure 4.2 below presents a summary of these results. When the findings of ever having had sexual intercourse while intoxicated were analyzed according to gender, 44 (35%) of male participants compared to 32 (33%) of females indicated ever having had sexual intercourse while intoxicated. The majority of participants in both male (n = 83; 65%) and female participants (n = 65; 67%) indicated that they had never had sexual intercourse while intoxicated. Differences in ever having had sexual intercourse between male and females were not statistically significant,  $\chi^2(224) = .067, p = .795$ .

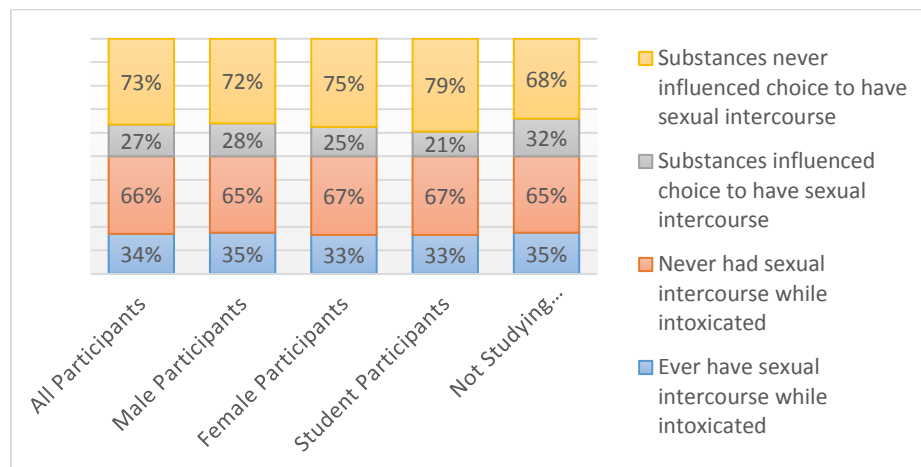
Results in Figure 2 below, further show that of those who reported ever having had sexual intercourse while intoxicated, 40 (35%) were participants who were not studying while 36 (33%) were student participants. However, a significance analysis did not yield any statistical significant differences among the above mentioned variables,  $\chi^2 (224) = .077, p = .782$ .

With regard to the influence of intoxicating substances (alcohol, dagga and cigarette) on the decision to have sexual intercourse, according to Figure 4.2, 60 (27%) of participants of the total sample confirmed that substances influenced their decision to engage in sexual intercourse, while 164 (73%) denied having been influenced by substances to engage in sexual intercourse.

An analysis within gender revealed that 36 (28%) of male participants indicated being influenced by substances to engage in sexual intercourse, while 91 (72%) reported that they were not influenced by substances. Among female participants, 24 (25%) confirmed being influenced by substances in their decision to have sexual intercourse while intoxicated, while 73 (75%) denied the influence of substances, refer to Figure 4.2 below. However, these gender differences were not statistically significant,  $\chi^2 (224) = .364, p = .546$ .

Further analysis of the results for the influence of substances on the decision to have sexual intercourse revealed that more participants who were not studying ( $n = 37, 32\%$ ) than those who were studying ( $n = 23, 21\%$ ) were found to be influenced by substances to have sexual intercourse while intoxicated. These differences were not statistically significant,  $\chi^2 (224) = 3.499, p = .061$ .

**Figure 4.2 A graph depicting risky sexual behaviour trends**

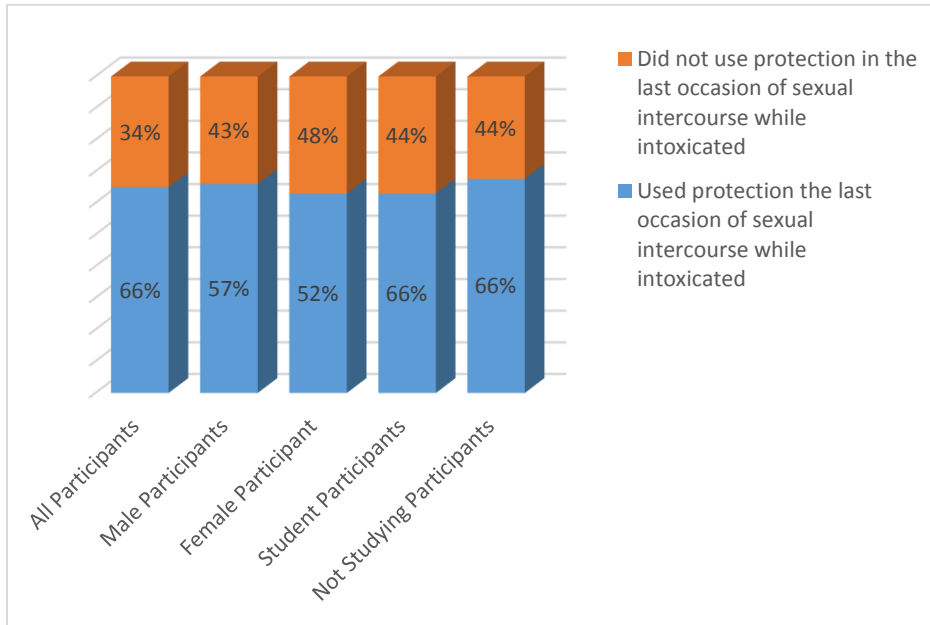


#### **4.7.1 The use of any protection against pregnancy or diseases when engaging in sexual intercourse while intoxicated.**

The graph in figure 4.3 below suggests that, of those who reported ever to have had sexual intercourse while intoxicated, 79 (66%) confirmed having used protection against pregnancy and diseases, while 41 (34%) indicated not. An analysis according to gender revealed that 38 (57%) of male participants compared to 41 (52%) of female participants were found to have used protection against pregnancy and diseases in the last occasion of sexual intercourse while under the influence of substances. The graph in Figure 4.3 also shows that there were those male ( $n = 29$ ; 43%) and female ( $n = 12$ ; 28%) participants who indicated that they did not use any protection in the last occasion when they had sexual intercourse while intoxicated. However, the above mentioned gender differences were not statistically significant,  $\chi^2 (120) = 5.606, p = .018$ .

When results were analyzed according to life activity, 35 (66%) of student participants and 44 (66%) of participants who were not studying confirmed to have used protection during the last occasion of sexual intercourse while intoxicated. Results in figure 4.3 below also show that 23 (34%) of participants who were not studying and 18 (34%) of student adolescents have indicated not having used protection during the last occasion when they had sexual intercourse while intoxicated. A *Chi-square* analysis found no statistically significant differences in the use of protection when engaging in sexual intercourse while intoxicated among participants who were not studying and student adolescents,  $\chi^2 (120) = .002, p = .967$ .

**Figure 4.3 A graph showing the use of protection when having sexual intercourse while intoxicated**



#### **4.8 Predictors of adolescents' risk-taking behavior**

*Binary logistic regression* was used to determine predictors of substance use (cigarettes, alcohol and dagga) and risky sexual behaviour. In the current study, computed estimates and odds ratios (*OR*) are reported with 95% confidence intervals (*CI*). The significance level of .05 was used as a cutoff point for statistical significance.

##### **4.8.1 Predictors of adolescents' substance use.**

###### **4.8.1.1 Predictors of cigarette smoking in adolescents.**

A binary logistic regression model was performed to determine the predictors of adolescents' cigarette smoking. The independent variables entered were gender, life activity, age, ever smoking dagga, ever using alcohol and age when alcohol was used for the first time. The full model containing all predictor variables was statistically insignificant,  $\chi^2$



(8,  $N = 216$ ) = 9.625,  $p = .292$  (Hosmer-Lemeshow Goodness-of-fit-test, sig. > .05), indicating a good model fit. The model explained about 49% (Nagelkerke's  $R^2 = .492$ ) of the variance in ever having smoked cigarettes, and was able to correctly classify 77% of cases.

Logistic regression table below (Table 4.19) depicts that only four predictor variables were statistically significant,  $p < .05$ . The model predicts that the odds of ever have smoked cigarettes among males in the current study were 17.660 times than that of female participants, odds ratio (OR) = 17.660, 95% confidence intervals (CI) = 6.084 – 51.259,  $P < .05$ . This implies that male adolescents in the current study were 17 times more likely to have ever smoked cigarettes compared to females. The logistic regression model further predicted that the odds of ever have smoked cigarettes among younger adolescents in the current study were 17.416 times than that of older participants, OR = 17.416, 95% CI = 6.023 – 50.364,  $P < 0.05$ , implying that younger adolescents were 17 times more likely to have ever smoked cigarette than older adolescents.

Table 4.19 below further shows that participants who have ever smoked dagga were 2.8 times more likely to smoke cigarettes than those who had never smoked dagga, OR = 2.8, 95% CI = 1.031 – 7.478,  $P = .043$ . Those participants who reported having used alcohol in the past year were 4.335 times more likely ever to have smoked cigarettes than those who had never used alcohol in the past year, OR = 4.335, 95% CI = 1.794 – 10.477,  $p < .05$ . This indicates that those who have used alcohol in the past year were 4 times more likely ever to have smoked cigarette. Logistic regression model did not yield significant predictions on life activity, OR = 5.97, 95% CI = .224 – 1.592,  $p = .302$ , and age of alcohol use onset, OR = 5.97, 95% CI = .897 – 2.122,  $p = .142$ . This means that the odds of ever having smoked cigarettes remained approximately the same when adjusted for studying or not studying, and for the age of onset for alcohol use in the current study, please see Table 4.19below.

**Table 4.19 Logistic regression predicting adolescents' cigarette smoking**

		B	S.E.	Wald	df	Sig.	OR	95% C.I.	
								Lower	Upper
	Gender	2.871	.544	27.890	1	.000***	17.660	6.084	51.259
	Studying	-.517	.501	1.064	1	.302	.597	.224	1.592
	Age	2.857	.542	27.816	1	.000***	17.416	6.023	50.364
Step	Ever smoked dagga	1.021	.505	4.086	1	.043*	2.777	1.031	7.478
1	Used alcohol during past year	1.467	.450	10.615	1	.001**	4.335	1.794	10.477
	Age of onset for alcohol use	.322	.220	2.153	1	.142	1.380	.897	2.122
	Constant	-9.537	3.508	7.390	1	.007	.000		

\*p

< 0.05, \*\*p < 0.01, \*\*\*p < 0.001

#### 4.8.1.2 Predictors of alcohol use among adolescents.

Another logistic regression model was fitted with six independent variables (gender, age, life activity, ever smoked cigarette, ever had sexual intercourse and age of dagga smoking onset) to calculate the predictors of adolescents' alcohol use. The full model containing all predictor variables was statistically insignificant,  $\chi^2(6, N = 216) = 5.071, p = .535$ , indicating a good model fit. It explained about 30% (Nagelkerke's  $R^2 = .304$ ) of variation in ever having used alcohol. The model as a whole was able to fittingly predict 74.4% of cases. From the six predictor variables fitted in the model, only age, ever having smoked cigarettes and ever having had sexual intercourse made statistically significant contributions, implying that these were the predictors of alcohol use in the present study.

Table 4.20 below depicts that older adolescents were 13.23 times more likely ever to have used alcohol compared to younger adolescents,  $OR = 13.23, 95\% CI = 1.161 - 150.681, P = .037$ . Participants who have never smoked cigarettes were found to be 5.3 times less likely to use alcohol than those who have ever smoked cigarette,  $OR = .190, 95\% CI = .048 - .751, P = .018$ . The logistic regression model also found that those who have never had sexual intercourse were 37 times less likely to use alcohol,  $OR = .037, 95\% CI = .004 - .383, p = .006$ . The model found no significant predictions on gender,  $OR = 2.67, 95\% CI = .179 - 39.912, p = .476$ , life activity,  $OR = 5.33, 95\% CI = .048 - .751, p = .372$ , and dagga smoking onset,  $OR = .766, 95\% CI = .254 - 2.314, p = .637$ . This suggest that these variables did not make any statistically significant contribution to predicting the use of alcohol.

**Table 4.20 Logistic regression predicting adolescents' alcohol use**

	B	S.E.	Wald	df	Sig.	OR	95% C.I.	
							Lower	Upper
Gender	.983	1.380	.507	1	.476	2.672	.179	39.912
Age*	2.582	1.241	4.328	1	.037	13.228	1.161	150.681
Studying	-.628	.704	.797	1	.372	.533	.134	2.119
Ever smoked cigarette*	-1.659	.701	5.609	1	.018	.190	.048	.751
Step 1 Ever had sexual* intercourse	-3.295	1.191	7.652	1	.006	.037	.004	.383
Age of smoking dagga onset	-.266	.564	.223	1	.637	.766	.254	2.314
Constant	6.255	8.828	.502	1	.479	520.617		

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

#### 4.8.1.3 Predictors of dagga smoking in adolescents.

To determine predictors for dagga smoking, six independent variables were fitted in the binary logistic regression model. These variables were gender, age, life activity, ever having smoked cigarettes, age of onset for alcohol use and age of onset for sexual intercourse, while the dependent variable was 'have ever smoked dagga'. The full binary logistic regression model containing all predictor variables was found to be statistically insignificant,  $\chi^2 (8, N = 97) = 11.527, p = .174$ . This suggests that the model was a good fit. The model also explained about 42.2% (Nagelkerke's  $R^2 = .422$ ) of variance in ever having smoked dagga. The model as a whole was able correctly to predict about 83.5% of cases. Of the four predictor variables fitted in the model, only four were statistically significant, indicating that they were the good predictors of dagga smoking patterns. These were gender, life activity, age of onset for alcohol use, and age of onset for sexual intercourse. Refer to Table 4.21 below.

Females were found to be 12.10 times less likely to have ever smoked dagga than males,  $OR = .082, 95\% CI = .009 - .776, p = .029$ . The model also showed that the odds of having ever smoked dagga for participants who were not studying were 10.9 times less than student participants,  $OR = .092, 95\% CI = .009 - .981, p = .048$ . This means that participants who were not studying were 10 times less likely than student participants to have smoked dagga.

According to Table 4.21 below, those who indicated late onset of alcohol use were 4.9 times less likely to have smoked dagga than those who indicated early age of onset for alcohol use,  $OR = .205$ ,  $95\% CI = .085 - .492$ ,  $p < .001$ . Finally, the model demonstrated that participants with an early age of onset for sexual intercourse were 3.9 times more likely to have smoked dagga than those who indicated late adolescence age of sexual intercourse,  $OR = .304$ ,  $95\% CI = .141 - .658$ ,  $p = .304$ .

**Table 4.21 Logistic regression predicting adolescents' dagga smoking**

	B	S.E.	Wald	df	Sig.	OR	95% C.I.	
							Lower	Upper
Gender	-2.499	1.146	4.757	1	.029*	.082	.009	.776
Age	1.427	1.278	1.246	1	.264	4.167	.340	51.052
Life activity	-2.382	1.206	3.905	1	.048*	.092	.009	.981
Step 1								
Ever smoked cigarette	1.054	.690	2.333	1	.127	2.869	.742	11.092
Age of alcohol onset	-1.585	.446	12.599	1	.000***	.205	.085	.492
Age of sexual intercourse onset	-1.189	.393	9.140	1	.003**	.304	.141	.658
Constant	42.710	11.591	13.577	1	.000	35390		

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

#### 4.8.2 Predictors of adolescents' risky-sexual behaviour.

##### 4.8.2.1 Predictors of having known partner for more than seven days before sexual intercourse.

To determine predictors of having known sexual partner for more than seven days, another binary logistic regression model was fitted with six independent variables (ever used alcohol, ever smoked cigarette, ever smoked dagga, gender, life activity and age). The whole model was found to be statistically insignificant,  $\chi^2 (8, N = 224) = 3.50$ ,  $p = .851$ , suggesting a good model fit. It was able to explain about 38% (Nagelkerke's  $R^2 = .377$ ) of variance on having known the sexual partner for seven days before sexual intercourse. The model as a whole was able correctly to classify about 85% of cases. Out of six predictor variables, only three were found to be statistically significant.

The odds of not having known sexual partner for seven days before intercourse for those who indicated ever having used alcohol were 9.29 times, suggesting that they were 9 times more likely than those who have never used alcohol not to have known their sexual partner for seven days before sexual intercourse,  $OR = .9.287$ ,  $95\% CI = 3.465 - 24.891$ ,  $p < .001$ , see Table 4.22 below. Those who indicated having smoked cigarettes were found to be 5.3 times more likely not to have known their sexual partner for seven days before sexual intercourse than those who have never smoked cigarette,  $OR = 5.309$ ,  $95\% CI = 1.733 - 16.270$ ,  $p = .003$ . Finally, the odds of not having known sexual partner for seven days before intercourse for those who indicated never to have smoked dagga were found to be 10.77 times, suggesting that they were 10 times more likely than those who have never smoked dagga not to have known their sexual partner for seven days before sexual intercourse,  $OR = 10.770$ ,  $95\% CI = 3.309 - 35.056$ ,  $p < .001$ .

The logistic regression model found no significant predictions on gender,  $OR = .620$ ,  $95\% CI = .203 - 1.895$ ,  $p = .401$ , life activity,  $OR = .973$ ,  $95\% CI = .410 - 2.314$ ,  $p = .952$ , and age,  $OR = .994$ ,  $95\% CI = .285 - 3.472$ ,  $p = .993$ . This suggest that they did not make any statistically significant contribution to having known their sexual partner for seven days before sexual intercourse.

**Table 4.22 Logistic regression predicting knowing a sexual partner for seven days before sexual intercourse**

	B	S.E.	Wald	df	Sig.	OR	95% C.I.	
							Lower	Upper
Ever used alcohol	2.229	.503	19.632	1	.000***	9.287	3.465	24.891
Ever smoked cigarette	1.669	.571	8.538	1	.003**	5.309	1.733	16.270
Ever smoked dagga	2.377	.602	15.580	1	.000***	10.770	3.309	35.056
Step 1 Gender	-.478	.570	.704	1	.401	.620	.203	1.895
Life activity	-.027	.442	.004	1	.952	.973	.410	2.314
Age	-.006	.638	.000	1	.993	.994	.285	3.472
Constant	-.157	.466	.113	1	.737	.855		

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

#### **4.8.2.2 Predictors of the use of protection during sexual intercourse.**

To determine predictors of having known a sexual partner for more than seven days, another binary logistic regression model was fitted with seven predictor variables (known sexual partner for 7 days before sexual intercourse, number of sexual partners in the past 12 months, ever having smoked dagga, ever having used alcohol, ever having smoked cigarettes, life activity and gender). The whole model was found to be statistically insignificant  $\chi^2 (8, N = 224) = 6.30, p = .577$ , suggesting a good model fit. It was able to explain about 52% (Nagelkerke's  $R^2 = .519$ ) of variance on having known sexual partner for seven days before sexual intercourse. The model as a whole was able correctly to classify about 77.2% of cases. Out of seven predictor variables, only one variable was found to be statistically insignificant. Please see Table 4.23 below for summary of logistic regression.

The model showed that the odds of using protection during sexual intercourse for those who had known their partners for more than seven days were .031 times than those who had not known sexual partner for more than seven days,  $OR = .031, 95\% CI = .006- .150, p < .001$ . This means that those who had known their sexual partners for more than seven days were 32.25 times less likely to have used protection than those who had not known their sexual partner for more than seven days. Table 4.23 below shows that those who indicated having smoked dagga were 3.037 times more likely not to have used protection than those who have never smoked dagga,  $OR = 3.037, 95\% CI = 1.137 - 8.113, p = .027$ .

The logistic model further showed that the odds of not using protection during sexual intercourse for those who have used alcohol were 10.659 times than that of those who have never used alcohol,  $OR = 10.659, 95\% CI = 3.357 - 32.206, p < .05$ , which means that those who have used alcohol were 10 times more likely not to have used protection during their last occasion of having sexual intercourse. Similarly, the odds of not using protection for those who have ever smoked dagga were 3 times less likely than those who have never smoked dagga to have used protection during the last sexual intercourse occasion,  $OR = 3.037, 95\% CI = 1.137 - 8.113, p = .027$ . Those who have ever smoked cigarettes were .133 times than of those who have never smoked cigarettes, suggesting that those who have smoked cigarettes were 7.5 times less likely to have used protection than those who have never smoked cigarettes,  $OR = .133, 95\% CI = .052 - .339, p < .05$ , see Table 4.23 below.

When it comes to life activity, those who were not studying were found to be about 5 times more likely not to have used protection during the last time they had sexual intercourse than student participants,  $OR = 4.997$ ,  $95\% CI = 2.014 - 12.398$ ,  $p = .001$ . Male participants were also found to be 11.6 times less likely to have used protection during their last sexual intercourse,  $OR = .086$ ,  $95\% CI = .254 - 8.113$ ,  $p < .001$ .

**Table 4.23 Logistic regression predicting the use of protection during the last sexual intercourse**

		B	S.E.	Wald	df	Sig.	OR	95% C.I.	
								Lower	Upper
Step 1	Known sexual partner for more than 7 days before sexual intercourse	-3.487	.810	18.554	1	.000***	.031	.006	.150
	Number of sexual partners in past 12 Months	.179	.147	1.476	1	.224	1.196	.896	1.595
	Ever smoked dagga	1.111	.501	4.913	1	.027*	3.037	1.137	8.113
	Ever used alcohol	2.366	.564	17.592	1	.000***	10.659	3.527	32.206
	Ever smoked cigarette	2.016	.476	17.905	1	.000***	.133	.052	.339
	Life activity	1.609	.464	12.041	1	.001**	4.997	2.014	12.398
	Gender	-2.450	.550	19.849	1	.000***	.086	.029	.254
	Constant	3.341	.887	14.179	1	.000	28.236		

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

#### 4.8.2.3 Predictors of having sexual intercourse while intoxicated.

To determine predictors of having sexual intercourse while intoxicated, ten independent variables were fitted on the binary logistic regression model. These variables were: ever having used alcohol, ever having smoked dagga, gender, life activity, ever having smoked cigarettes, age of onset for sexual intercourse, having used protection during the last sexual intercourse, number of sexual partners in the past 12 months and drugs influencing the choice to have sexual intercourse. The model was found to be statistically insignificant,  $\chi^2 (8, N = 120) = 3.831$ ,  $p = .577$ , which suggests a good model fit. The whole model was able to explain about 63.6% (Nagelkerke's  $R^2 = .636$ ) of variance on having had sexual intercourse while intoxicated. The model as a whole was able to

correctly classify about 87% of cases. Table 4.24 below suggests that only one predictor variable was statistically significant.

The results of the logistic model showed that those whose decision to have sexual intercourse was influenced by substances were found to be 45.72 times more likely to have sexual intercourse than those who were not being influenced by substances to engage in sexual intercourse while intoxicated,  $OR = 45.720$ ,  $95\% CI = 11.389 - 183.545$ ,  $p < .001$ . The other nine predictor variables fitted in the model were found not to be statistically significant ( $p > .05$ ), see Table 4.24 below.

**Table 4.24 Logistic regression for predicting having sexual intercourse while intoxicated**

		B	S.E.	Wald	df	Sig.	OR	95% C.I	
								Lower	Upper
	Ever used alcohol	.629	1.138	.306	1	.580	1.877	.202	17.460
	Ever smoked dagga	.784	.735	1.137	1	.286	2.189	.518	9.243
	Gender	1.677	.885	3.592	1	.058	5.348	.944	30.286
	Life activity	-.352	.730	.233	1	.629	.703	.168	2.941
	Ever smoked cigarette	1.630	.954	2.917	1	.088	5.102	.786	33.106
Step	Age of onset for sexual intercourse	.103	.268	.149	1	.700	1.109	.656	1.875
1	Used protection during last intercourse	-.274	.754	.132	1	.717	.761	.174	3.332
	Number of sexual partners in past 12 months	-.071	.231	.095	1	.758	.931	.592	1.465
	Drugs influenced choice to have sex	3.823	.709	29.055	1	.000***	45.720	11.389	183.545
	Used protection while intoxicated	-.571	.729	.614	1	.433	.565	.135	2.358
	Constant	-4.46	4.081	1.193	1	.275	.012		

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

#### 4.9 Chapter Conclusion

This chapter presented the results of the current study. The Statistical Package for Social Sciences (SPSS) was used for data recording and analysis. Cross-tabulation tables, graphs and frequency tables were among the means through which the findings were presented. The *Chi-square test* was used in examining the significant relationships among variables containing nominal data, while the *Wilcoxon-Mann-Whitney test* was performed to determine significant differences on variables containing ordinal or interval data. Finally,



the logistic regression analysis was performed in order to identify determinants of adolescents' risk-taking behaviours. Discussion of results will follow in the next chapter.

## CHAPTER FIVE

### DISCUSSION

#### 5.1 Introduction

The objective of this research was to investigate the relationship between substance use and risky-sexual behaviour among adolescents who are at tertiary institutions and those who are neither studying nor employed. It was hypothesized that adolescents who are neither studying nor employed engage in more risky sexual behaviour while intoxicated than adolescents who are at tertiary institutions. This was premised on the realisation that most of these adolescents who are not studying come from previously disadvantaged communities that are characterised by poverty and unemployment (Steyn et al, 2010). In general, poverty and unemployment are directly related to risk-taking behaviours such as substance use and risky sexual behaviour (Extremera & Rey, 2016). Adolescent studies have also demonstrated that poverty and unemployment are among the predictors of adolescents' engagement in substance use and risky sexual behaviour (Jackson, 2005; Lambani, 2015; Rocha-Silva, 1997). As a result of negotiating developmental challenges brought by adolescence in the face of psychosocial difficulties, such as poverty and unemployment, it was hypothesized in this study that adolescents who were not studying would be more likely to engage in risk-taking behaviours than their student counterparts.

This chapter discusses the findings presented in chapter four of this study. The results are discussed in relation to questions and the objectives of the current study. Key findings will be discussed first. The discussion of key findings will focus on comparing the relationship between substance use and the risky sexual behaviour of student adolescents and of adolescents who were neither studying nor employed. This will be followed by a discussion of substance use results (cigarettes, dagga and alcohol). Thereafter, the focus of the discussion will be on adolescents' risky sexual behaviour results.

## **5.2 Key Findings of the Study**

A number of significant findings were identified in the current study. However, only key findings that highlight the objectives of this study will be discussed and those that were found to be of significance.

### **5.2.1 Relationship between substance use and risky sexual behaviour among participants.**

Most of risk-taking behaviours are known to be initiated and tend to co-occur during adolescence (Centre for Justice and Crime Prevention, 2008; Ritchwood et al., 2015). Studies have also shown the existence of a relationship between substance use and risky sexual behaviour among adolescents. Whilst the direction of causality between substance use and risky sexual behaviour among adolescents is unknown, some researchers have pointed out that substance use tends to be the first risk-taking behaviour that adolescents initiate, and it is then followed by a transition to risky sexual behaviour (Palen et al., 2006; Palen et al., 2009; Hart et al, 2009).

In keeping with the abovementioned assertion, the current study similarly found that 34% of the overall sample reported to have ever had sexual intercourse while under the influence of intoxicating substance. At the same token, those who have indicated to have ever had sexual intercourse while intoxicated were found to be 45 times most likely to have been influenced by substances. Thus, the current study found that being intoxicated to be a good predictor of taking a decision to engage in sexual intercourse. These findings are consistent with a study by Palen, et al. (2006), in the North-West province, which indicated that about 39% of adolescents used alcohol and dagga during their recent sexual encounters. It is worth noting that, given the complexity of this phase of life development (adolescence), there would be various factors that determine or mediate the level of exposure to, and engagement in risk-taking behaviours. These factors include, among other things, interpersonal factors, peer pressure, socio-economic status of parents and community background (Morojele, et al., 2012). Consequently, these factors need to be taken into cognisance when dealing with adolescents' substance use and risky sexual behaviour. Among substances included in this study, alcohol was found to be the best

predictor of not using protection during sexual intercourse, with those who had used alcohol were found to be 10 times less likely to have used any form of protection during sexual intercourse. The link between alcohol as the best predictor of risky sexual practices when intoxicated has also been shown in other previous studies from South Africa and elsewhere (Morojele & Ramsoomar, 2016; Smith et al. 2008; Wolf-King & Maisto, 2009). There are various factors that could be influencing such trends. In general, among adolescent population, it is known that engagement in one risk-taking behaviour paves way for another risk-taking behaviour to occur (Kipping, et al., 2012). For an example, having used intoxicating substances may increase a likelihood of engagement in risky sexual behaviour. In particular, alcohol is known to compromise safer sex negotiating skills and inhibitions in adolescents, thereby increasing their exposure to engagement in risk-taking behaviour such as unprotected sexual intercourse (Kaufman, et al., 2014).

Given the dire health-related negative outcomes associated with risky sexual behaviour (Zhao et al., 2016), adolescents who engage in sexual intercourse while intoxicated face greater risk of unplanned pregnancy and exposure to sexually transmitted diseases. Such results imply that, as this is the era of HIV/AIDS pandemic and the high prevalence of sexually transmitted infections among adolescents (Gebretsadik & Babbal, 2014; Manyapelo et al., 2017), alcohol need to be identified and treated as one of the prime sexual risk factors that need special attention at policy, research and psychotherapeutic levels.

The use of alcohol by adolescents in South Africa is complicated by the fact that adolescents who are at the age of 18 are legally allowed to buy and drink alcohol (Parry, 2010; Ramsoomar, 2015) and this imposes a detrimental effect on their optimal development given the long term impact alcohol has on the overall wellbeing of a developing adolescent (Marshall, 2014). Dagga was found to be the second predictor of engagement in risky sexual behaviour while intoxicated in the current study. Those who have ever smoked dagga were found to be 3 times less likely to have used protection during their recent sexual encounter. Such results raise concern since substances such as dagga are known to compromise adolescents' safer sex negotiation skills and inhibitions, thereby increasing vulnerability to engagement in risky sexual behaviour (Kaufman et al., 2014; WHO, 2010; Schuster et al., 2012). Dagga is the most frequently used illegal substance

by adolescents all over the world (NIDA, 2011), it is also the most easily available illegal substance when compared to others (Morojele, et al., 2012). As such, its ease of availability may be implicated in the emerging trends that are related to the impact of substances on adolescents' risky sexual behaviours such as not using protection.

When it comes to gender differences in patterns of sexual intercourse while intoxicated, findings show no statistically significant differences between male and female adolescents who participated in the present study. These findings deviate from what has been documented in some previous studies where male adolescents had been found to use intoxicating substances and engaging in sexual intercourse more than their female peers (see e.g. Flisher et al., 1993; Brook et al., 2006; Kheswa, 2015; Morojele et al., 2013). Such changes in gender differences in engagement in sexual intercourse while intoxicated may be attributed to the adoption of egalitarian norms discouraging 'traditional gender norms' that perpetuate gender inequalities and afford males more freedom and entitlements than females (Mantell et al., 2009). Previously it was only male adolescents who used to experience greater freedom to move outside of the household and engage in leisure activities while also facing an increased opportunity to engage in risk-taking behaviour. Nowadays some female adolescents also enjoy such privileges that come with adverse consequences (Kagesten et al., 2016). Consequently, female adolescents might find themselves in spaces that were previously frequented by males and also engaging in behaviour that were previously regarded as 'unfemale', which may render them vulnerable to engaging in risk taking behaviours such as sexual intercourse while intoxicated. Although adoption of egalitarian gender norms is essential in curbing gender inequality (Mantell et al., 2013), its link with the odds for female adolescents adopting risk-taking behaviours (Mejia et al., 2013), calls for attention.

The results of the present study also revealed no statistically significant difference in having sexual intercourse while intoxicated between student adolescents and those who were not studying. These findings may suggest that being a student might not serve as a protective factor when it comes to engagement in sexual intercourse while intoxicated. Findings such as these also confirm that, in general, adolescents who engaged in substance use have a higher likelihood of engaging in sexual intercourse than those who do not use intoxicating substances (Verweij et al., 2009; WHO, 2010).

Among male and female participants, the findings of this study found no significant differences in the influence of substances on the decision to have sexual intercourse while intoxicated. This highlights the changing gender patterns in the involvement in such behaviour. As is apparent in the above mentioned findings, male adolescents appear to be no longer the leading gender when it comes to some of the risk-taking behaviours. However, when it concerns life activity, statistically significant differences emerged between student adolescents and those who were not studying, with more participants who were not studying than student adolescents indicating the influence of substances on the decision to engage in sexual intercourse. Such findings are disturbing given the fact that substances are known to diminish safer sexual intercourse practices and render adolescents vulnerable to engage in unprotected sexual intercourse (Kaufman et al., 2014; WHO, 2010). It has been mentioned in the current study that self-regulation, low self-esteem, perceived external locus of control, self-efficacy and depressive symptoms are among the intrapsychic mechanisms that render adolescents vulnerable to risk-taking behaviours (Bandura, 1997; DiClemente, 2003; Morojele et al. 2013; Chilisa et al., 2013). Some of the above mentioned mechanisms have been associated with unemployment (Du Toit, 2003) and poverty (Bengs, 2009; Notole & Kheswa, 2014), which have been linked to lower educational opportunities (Cluver et al., 2013). Thus, the significant difference in the influence of substances on the decision to engage in sexual intercourse between student adolescents and those who are currently not studying might be as a result of diminished intrapsychic control mechanisms on the part of adolescents who were not studying due to exposure to environmental stressors, such as poverty or unemployment.

Furthermore, regarding the use of protection during sexual intercourse while intoxicated, 34% in both groups of adolescents in the present study admitted that they did not use any form of protection while under the influence of intoxicating substances. The above mentioned findings are consistent with the study by Smith et al. (2008) where adolescents also reported that they were less likely to use protection when they engaged in sexual intercourse while under the influence of substances (see also Centre for Justice and Crime Prevention, 2008). In this study no significant differences were found between genders and between student adolescents and those who were not studying when it came to the use of any form of protection during their last occasion of sexual intercourse while

intoxicated. This suggests that there are similarities among the groups that were being compared in the current study when it comes to using protection while intoxicated.

What is perhaps troubling is that adolescents engage in such risky behaviours with full awareness of adverse consequences involved. Reiner et al., (2016) argue that adolescents pay more attention to immediate gratification and are also strongly focused on the rewards rather than associated costs of their decisions and behaviours. That may explain the engagement in such behaviours with the total knowledge of the dangers involved. The Health Belief Model posits that individuals in some cases engage in risk with an awareness of the negative consequences involved when they perceive the risk involved as not sufficiently severe to warrant action (Rosenstock, Strecher & Becker, 1994).

### **5.3 Substance Use**

#### **5.3.1 Cigarette smoking.**

Results show that 40% of the adolescents who participated in the current study have smoked cigarettes and 39% of these were classified as heavy smokers. These findings are consistent with those of Reddy et al. (2003) and Reddy et al. (2009) who both reported that more than 30% of adolescents who participated in their studies have smoked cigarettes. Such findings are a concern since cigarettes are known to be a gateway drug. Adolescents tend to begin by experimenting with cigarettes before engaging with more serious substances (Ramlagan et al., 2011). The classification of 39% of participants who smoke cigarettes as heavy smokers is of great concern since it is known that initiating cigarette smoking during adolescence is linked to a number of lifelong complications, including the development of nicotine dependence, adulthood smoking (Pahl et al., 2010) as well as cigarette-related health problems (Park, 2011). The fact that, out of 40% who have ever smoked cigarette 39% were classified as heavy smokers, also points to the addictive nature of cigarette. According to Pahl et al. (2010) nicotine in cigarette is more highly addictive than most substances of abuse. Therefore, those adolescents who experiment with cigarettes have a higher likelihood of being hooked and of becoming regular smokers, as witnessed in the current study. As such, cigarette smoking appears to continue to be among the prime risk-taking behaviours that adolescents tussle with.

However, despite risks that adolescents may encounter when initiating smoking, there remains a sizeable number who initiate it. The Health Belief Model (HBM) holds that when people believe that their lives are susceptible to risk, there is a high likelihood that they will adopt healthy behaviours that will minimise the risk (Rosenstock, 1990). In this case, those who initiate smoking might not perceive their lives as in danger of developing cigarette-related complications. Initiation of risk-taking behaviours, such as cigarette smoking, is also dictated by a number of factors ranging from intrapersonal characteristics (Brook et al., 2006; DiClemente, 2003), peers, family environment, community and society at large (Morojele et al., 2012). For instance, diminished self-esteem and self-efficacy, association with delinquent peers and being raised by parents or guardians who engage in risk-taking behaviours like cigarette smoking, have been linked with the initiation of risk-taking behaviours, such as cigarette smoking, on adolescents (Chilisa et al., 2013; Feldstein & Miller, 2006; Morojele et al., 2012). This implies that an attempt at discouraging the initiation of cigarette smoking among adolescents has to focus on all the spheres that serve as risk factors to adolescent smoking.

In the current study it was also found that smoking cigarettes was also associated with the use of other substances. Adolescents who had ever smoked dagga were found to be 4 times more likely to have smoked cigarettes. Similarly, those who have ever used alcohol were found to be 4 times more likely ever to have smoked cigarettes. Such findings are not surprising since it is well documented that experimenting with one substance during adolescence, may pave the way for experimentation with other forms of substances (Morojele et al., 2012).

As other studies of a similar nature have also documented (Fisher et al., 1993; Medical Research Council, 2008; Taylor et al., 2009), the findings of the current study showed that significantly more males than females have ever smoked cigarettes. Gender was also found to be a significant predictor of cigarette smoking, with males found to be 17 times more likely to have smoked cigarettes than females. These findings imply that male adolescents, when it comes to cigarette smoking, are more endangered than their female peers. The literature offers differing accounts to explain the dominance of male adolescents over females when it comes to engagement in substances such as cigarettes (Mahalik et



al., 2007; Reardon & Govender, 2013; Rozi et al., 2016). For example, Reardon and Govender (2013) argue that adolescent males are more likely to perceive certain risk-taking behaviours, such as cigarette smoking, as an opportunity to prove their masculinity to their peers. This, according to Gardner and Steinberg (2005), happens in the context of peer relationships, away from adults as adolescents are known to spend most of their time with peers. Others argue that having friends who smoke cigarette is one of the prime predictors of cigarette smoking among male adolescents (Rozi et al., 2016). Thus, if an adolescent child associates with peers who smoke cigarettes, there is a high likelihood that they will also smoke cigarette. In the light of the above findings, there is a great need to design proactive interventions that are aimed at discouraging male adolescents from initiating smoking. Since peer group affiliation is an important factor during this stage (Gardner & Steinberg, 2005), using peer groups as vehicles for encouraging healthy behaviours may be beneficial. Tome et al., (2012) argue that positive influence from the peer group has a direct influence on positive behaviour outcomes. However, it is imperative to stress that there are individual attributes, such as resilience (Burnett et al., 2014) and self-regulation (Bhana & Petersen, 2009) identified in the literature which might possibly serve as buffers against peer pressure and involvement in risk-taking behaviours, such as cigarette smoking. For instance, adolescents who possess self-regulation are known for not succumbing to influences such as peer pressure to engage in risk-taking behaviours.

Furthermore, age was found to be one of the predictors of cigarette smoking in the current study. The minimum age of onset for those who indicated ever having smoked cigarette was 12 years, with 15 years as a mean. Younger adolescents (18-19 years) were found to be 17 times more likely ever to have smoked cigarettes than older adolescents (20-21 years). More males than females also reported a statistically significant earlier age of cigarette smoking onset (below the age of 15 years). These findings are consistent with findings of other empirical studies that have documented early age of onset for cigarette smoking among adolescents (Medical Research Council, 2008; NIDA, 2011; ). In South Africa, it is prohibited by law to sell cigarettes to children who are below the age of 18 (Rantao & Ayo-Yusuf, 2012). Cigarette producers are obliged by law to place a risk warning on all cigarette packages and they are also restricted in advertising and promoting tobacco products. However, despite these legal controls, results of the current study show that a proportion of adolescents initiate smoking below the age of 18. Such findings

highlight the need for ensuring greater enforcement of legal restrictions regarding cigarette sales to children who are below the age of 18, and of initiating prevention programs aimed at children who are 15 years and below.

Age of onset for cigarette smoking was also a significant factor when comparing student adolescents and those who were not studying, with the latter indicating having initiated smoking cigarettes at an earlier age than studying participants. It is important to reiterate that the majority of participants who were not studying were from previously disadvantaged communities. Such communities are known for poor socio-economic status, high prevalence of substance use and early onset of risk-taking behaviours (Jackson, 2005; Lambani, 2015). Bengs (2009) stress that adolescents from such communities may find themselves engaging in risk-taking behaviours earlier than their peers from affluent backgrounds.

### **5.3.2 Alcohol consumption.**

The results of the current study indicated that 53% of the participants reported ever having used alcohol. Alcohol is known for being the most used legal substance by adolescents and it is readily available to adolescents in their social environments (Morojele et al., 2012). The fact that more than half of adolescents who participated in the current study admitted ever to have used alcohol is problematic because drinking alcohol exposes adolescents to impairment in cognitive functioning (Lubman et al., 2007), increases vulnerability to injury or harm and also the development of abnormal drinking patterns, including alcohol abuse and alcohol dependence (Marshall, 2014).

Findings of the current study showed that more males than females have used alcohol in their lifetimes. About 58% of males compared to 42% of females were found to have used alcohol in the past year. These findings were also significant. Findings like these emerged in a number of studies where male adolescents appeared to have surpassed their female peers on alcohol use (Flisher et al., 1993; Peltzer & Phaswana, 1999; Taylor et al. 2009). Such trends are disturbing given the negative impact alcohol is known to impose to the lives of adolescents. Culturally and socially entrenched constructions of masculinity are some of the factors that are responsible for the dominance of adolescents' male alcohol

use patterns over that of females (Mahalik et al., 2007). Such masculinity constructs often portray males as strong and invincible, which in turn, discourages non-risk-taking behaviours (Rich et al., 2015). Adolescent boys may engage in alcohol use as a way of showing to peers and others that they are 'real men'. These gender differences in alcohol use suggest that male adolescents are more vulnerable to alcohol use than their female counterparts. As such, given the evident vulnerability, alcohol-related health promotion policies, prevention, intervention and treatment methods should be intensified on male adolescents.

More than half (51%) of those who indicated having used alcohol were student participants, suggesting that more student adolescents than those who were not studying, have used alcohol. Such findings are important in the present study because engagement with substances such as alcohol, is expected from adolescents who are not studying, given the psychosocial challenges that they face. However, university going adolescents have long been associated with the use of alcohol. For instance, a qualitative study by Chanakira et al., (2014) among university students in the United Kingdom found that nearly all participants regarded alcohol as an integral part of student life. They also documented that because of its dis-inhibitory effect and social acceptability, several students preferred alcohol to other substances (Chanakira et al., 2014). University life is often associated with tremendous environmental stress: students might use alcohol as a maladaptive coping mechanism (Marshall, 2014). Easy accessibility of alcohol in tertiary institutions, according to Ramlagan et al., (2011), may also be cited as one of the reasons behind the use of alcohol by student adolescents over their peers who were not studying.

In terms of age, the age of alcohol use onset among the total sample was 12 years. These findings are in line with findings of the study by World Health Organization (2012) which estimated that about 10 million young people all over the world who are between the age of 12 and 20 years have consumed alcohol. Findings of this research also shows that alcohol use increases with age. Older adolescents were found to be 13 times more likely to have used alcohol than younger adolescents. There are various reasons behind the upward tendency of alcohol use as the age increases. Madu and Matla (2003) argue that older adolescents often perceive themselves as adults and using alcohol may be as sign of reaching maturity to them. Parry (2010) attributes such trend to the South African legal system which gives 18-year-olds the right to buy and consume alcohol.

The legal allowance of 18 year olds to purchase alcohol poses a threat to adolescents' wellbeing since they are known to be prone to decision making errors (Kuhn, 2006). Burnett et al. (2010) argue that during the adolescent period, cognitive control mechanisms that regulate behaviour and control impulsivity, are still developing and this exposes adolescents to making mistakes in decisions and in actions. The situation becomes more volatile when alcohol is involved since it is known that alcohol impairs judgement and propel individuals to behave in a dis-inhibitory manner (Chanakira et al., 2014). A review of relevant statutes may assist by changing the law and prohibiting the sale and consumption of alcohol to individuals below the age of 21 years. A change in legal age of alcohol consumption to 21, may be beneficial to adolescents since individuals who are above the age of 21 are more mature and are able to make better calculated decisions compared to their younger counterparts (Spear, 2000).

The findings of the current study also revealed that significantly more participants who were not studying indicated their age of alcohol use onset as early adolescence (below the age of 15 years). This highlights contextual impact on adolescents' involvement in substance use. Such finds may be attributed to social context as most of those who were not studying were from previously disadvantaged communities. In such communities, according to Feldstein and Miller (2006), there is exposure to public drunkenness and easy access to substances. As such, adolescents who are growing up in such environments are more likely to consume alcohol earlier than their peers from different social environments.

### **5.3.3 Dagga smoking.**

The results suggest that 22.5% of the total sample admitted to ever having smoked dagga. These numbers highlight a descending trend in the use of dagga among adolescents. For example, in South Africa the prevalence of dagga smoking among the adolescent population was 27% in 2012 (NIDA, 2012). Despite the observed decline in numbers of adolescents reporting ever to have smoked dagga, it is still of great concern that more than 20% of adolescents reported ever having smoked dagga in this study. Dagga is known for causing poorer cognitive functioning and neurodevelopmental complications in adolescents (Lisdahl et al., 2014). Of the 22.5% who indicated ever having smoked dagga in the current study 12.3% were males while 10.3% were females. These

gender differences were found not to be statistically significant, suggesting that there were no significant differences in ever having smoked dagga between male and female adolescents who participated in this study. Such results are not in line with the results of previous studies that have found male adolescents ever to have smoked dagga more than their female peers. For example, the study by Taylor et al. (2009) on KwaZulu Natal adolescents found that 16.9% of males compared to 2.3% of females reported ever having smoked dagga. The differences between the above mentioned results imply that among adolescents of both genders, dagga is a commonly used illegal substance. Adolescents are known to smoke dagga for various reasons. For example, some smoke dagga for recreational purposes, boredom, weight loss and self-esteem issues to mention but a few (Peltzer, 2010; Wegner & Flisher, 2009). Thus, there is a need to consider the above mentioned reasons when devising interventions aimed at adolescent dagga use and abuse. Interventions targeting females have to be enhanced in order to be able to curtail the increasing number of female adolescents who have ever smoked dagga.

Moreover, the findings of the present study further revealed that most participants initiated dagga smoking around the age of 16. This age is slightly lower than what was stated by Jayousi (2003), that the period between the ages of 17-19 years is a great risk of alcohol and dagga smoking. This can be viewed as an indication that the age of onset in engagement in risk-taking behaviours is decreasing (Flisher et al., 1993). The *Wilcoxon-Mann-Whitney test* showed a significant relationship between age of smoking onset and studying or not studying, suggesting that student adolescents tend to start smoking dagga earlier than their peers who are currently not studying, hence 27% indicated early adolescence as their age of onset for dagga smoking. These findings may be explained by the availability of funds for buying dagga to students since most of them come from families who are financially stable (Burns & Keswell, 2011).

Another significant relationship was found between gender and age of dagga smoking onset, with more females than males reporting early adolescence as their age of dagga smoking onset. These findings suggest that most female adolescents in the current study who have ever smoked dagga began smoking it during early adolescence, which is disturbing. These findings may be partly attributed to pubertal timing of female adolescents. According to Marklein, Negriff and Dorn (2009) female adolescents mature earlier than their

male counterparts, and this renders them vulnerable to engagement in risk-taking behaviours, such as dagga smoking. Vulnerability may be fueled by the fact that pubertal maturity does not occur simultaneously with cognitive and emotional maturity (Marklein et al., 2009), thus, female adolescents who mature earlier may be less capable of dealing with pressures and opportunities of engaging in substances such as dagga. Research on dagga smoking adolescents has reported a positive correlation between dagga smoking and risky sexual behaviour (Schuster et al., 2012). This implies that female adolescents expose themselves to adverse consequences associated with dagga smoking and risky sexual behaviour, such as early onset of sexual intercourse, exposure to sexually transmitted diseases and adolescent pregnancy (Schuster et al., 2012). This again highlights the need for preventive measures against dagga smoking to be inclusive of girls who are in early adolescence.

#### **5.4 Adolescents' Risky sexual Behaviour**

The findings of the current study show statistically significant gender differences in engagement in sexual intercourse, with male adolescents reporting having had sexual intercourse more than their female counterparts. Such findings are congruent with that of previous studies (Amoateng & Kalule-Sabiti, 2013; Amoateng et al., 2014; Berhan & Berhan, 2015; Shisana et al., 2009). There are various reasons that have been highlighted in the literature review as causing male adolescents to engage in risky sexual behaviour more than their female counterparts. Awotibe et al. (2014) attribute this behaviour to high testosterone levels in male adolescents which increase early disposition to sexual activities. Mimiaga et al. (2015) assert that culturally defined sexual and gender norms, and manifestations of sexual power may be responsible for the large number of male adolescents compared to females who have ever had sexual intercourse. This notion has also been highlighted by Mchunu et al. (2012).

Results show no significant differences between student adolescents and those who were currently not studying when it comes to ever having had sexual intercourse, highlighting that being an adolescent who is studying might not serve as a protective factor when it comes to sexual intercourse experience. These results are not surprising since it is known that sexual experimentation is a normal part of adolescent development (Chick &

Reyna, 2012). However, despite being the normal part of adolescent development, involvement in sexual activities during adolescence may serve as a precursor to risky sexual behaviour. Such findings on the part of student participants, may be explained by the hormonal changes that happen during adolescence, greater independence and freedom from parental control (Rozmus et al., 2005) and adjustment issues as a result of being away from home (Laska et al., 2009). When it comes to participants who are not studying, in addition to biological vulnerability, their involvement in sexual intercourse may also be partly explained by the fact that most of them experience boredom and have a lot of time at their disposal (Wegner & Flisher, 2009). Having a lot of leisure time, boredom and depressive symptoms associated with doing nothing, are all implicated in adolescents' involvement in sexual intercourse (Agardh, 2012; Brook et al., 2006).

With regard to the age of sexual intercourse onset, the minimum age of sexual intercourse onset was 12, with 15 years as an average age of onset for sexual intercourse in the current study. These findings are consistent with that of other studies that have revealed that the age of onset of sexual intercourse is dramatically decreasing, with adolescents younger than 15 years engaging in sexual intercourse (Peltzer, 2010; Selikow, Ahmed, Flisher, Mathews & Mukoma, 2009). Males in this study reported significantly lower age of onset for sexual intercourse compared to females, suggesting that male adolescents tend to initiate sexual activities earlier than their female counterparts. Likewise, significantly more student adolescents were found to have engaged in sexual activities earlier than their peers who were not studying. Early onset of sexual intercourse has been found to be associated with other risky sexual behaviours and their adverse outcomes such as, unplanned pregnancy, contraction of sexually transmitted diseases and HIV/AIDS (Awotibe, Phillips, & Lens, 2014; Kearney & Levine, 2012; Thobejane, 2015). The literature also posits that adolescent pregnancy also exposes adolescent mothers to prenatal complications, including inadequate prenatal care, premature birth, child abuse (Kearney & Levine, 2012) and maternal mortality (Thobejane, 2015). As such, these trends require special attention in order to ensure the minimisation of vulnerability.

The findings of this study show that the majority (65%) of those who indicated ever having had sexual intercourse, were classified as high sexual risk when assessed by the number of sexual partners in the past 12 months. They indicated having had more than two

sexual partners in the past 12 months. Statistically significant associations emerged when comparing genders, with male adolescents reporting multiple sexual partners in the past 12 months; more than their female counterparts and 40% reporting being sexually active, compared to 24% of females. These findings highlight the gender differences in engagement in risky sexual behaviour and that male adolescents might be at higher risk compared to females. Previous studies have attempted to explain the reasons behind male adolescents' risky sexual behaviour. For example, a study of young South African males showed that HIV risk behaviours, such as concurrent sexual partners and unprotected sexual intercourse, correlated with higher endorsement of traditionally held conceptions of masculinity that emphasize authority over women (Brook, et al., 2006). Such trends have also been observed in other African countries, for instance, in a study by Izugbara and Undie (2008) on Malawian male adolescents, it was documented that male adolescents perceived having concurrent sexual partners, authority and control over females as a confirmation of masculinity.

According to Brook et al. (2006), for some male adolescents in South Africa, there is significant peer pressure among adolescent males to be sexually active. Adolescent boys are known for being normally competitive and in most cases they would try to outshine each other (Morojele et al., 2012). As a result, they might try to engage in risk taking behaviours such as risky sexual behaviour and multiple sexual partners, in order to adhere to the group norms and show virility even if they had no intention of engaging in those behaviours. Such gendered patterns have also been reported in other adolescent studies (Amoateng et al., 2014; Berhan & Berhan, 2015; Brook et al., 2006).

Statistically significant differences were found between student adolescents and those who were not studying, in the most recent occasion of sexual intercourse, with more of those who were not studying than student adolescents indicating that they last had had sexual intercourse in the previous week. These participants were classified as sexually active. Amoateng et al., 2014) assert that household income is known to be an important factor affecting adolescent behaviour. Most of the participants who were not studying were from neighbourhoods characterised by poverty. Adolescents from such communities may engage in risk-taking behaviours, such as risky sexual behaviour, as a way of dealing with distress associated with being poor (Mohasoa, 2010). Given the high prevalence of



HIV/AIDS and its association with low socio-economic conditions, results like these are of great concern because they highlight the dangers faced by adolescents who are not studying.

Furthermore, 80% of participants indicated having known their sexual partner for more than seven days prior to sexual intercourse. These results imply that the majority of participants in this study do not have sexual intercourse with complete strangers. Although these are positive findings, the remaining 20% who have had sexual intercourse with strangers is worrying. These findings may be attributed to poor affect regulation, which is characteristic of adolescents (Shier et al., 2010). Poor affect regulation may result in momentary sexual affect which may expose adolescents to unplanned sexual intercourse with strangers. Having sexual intercourse with strangers exposes adolescents to sexual intercourse with individuals whose personal and medical history are not known. This exposes adolescents to contracting sexually transmitted diseases and unplanned pregnancy by a stranger.

Moreover, with regard to the use of protection against pregnancy and diseases during the last time of having sexual intercourse, 37% of the participants in the present study reported that they did not use protection. Despite various protection use campaigns and interventions that have been designed by the South African government, as evidenced in the above mentioned results, some adolescents still engage in unprotected sexual intercourse. Such findings imply that adolescent-oriented protection use awareness campaigns need to be intensified. These results also highlight the importance of conducting more studies on the reasons behind some adolescents' failure to use protection when engaging in sexual intercourse.

Significant differences were found between student adolescents and those who were not studying, in the use of protection during the last occurrence of sexual intercourse, suggesting that most adolescents who were not studying were less likely to have used protection during their last sexual encounter. It was also found that more males than females indicated not having used protection. This denotes adolescent males and those who are not studying are in serious danger of contracting HIV/AIDS. Such findings are disturbing given the fact that globally, youth accounts for 45% of all new infections of

HIV/AIDS, with almost 90% of this number living in Sub-Saharan Africa (Bhana & Petersen, 2009). However, despite dangers associated with engagement in unprotected sexual intercourse, some adolescents, especially males, still do not use protection when having sexual intercourse. A number of studies have demonstrated that adolescents tend to believe that they are invincible and not prone to risk (Kenyon et al., 2010; Macphail & Campbell, 2001). For an example, a study by Macphail and Campbell (2001) on 15-24-year-old males in a South African township discovered that 70% of participants thought that they were not at risk of contracting HIV even though they were not using condoms consistently.

The Health Belief Model holds that, in some instances, even when the perception of risk is high, individuals still engage in unhealthy practices (Yep, 1993). For example, in a study by Lewis and Malow (1997) on American college youths, it was discovered that students were still engaging in risky sexual behaviour even though they perceived contracting sexually transmitted diseases as a high risk. The above explanations might shed light on male adolescents' inconsistent condom use. The high rate of unprotected sexual intercourse among adolescents who are currently not studying may be partly due to the fact that they are also unemployed. Being employed has been said to provide people with feelings of self-esteem and self-worth (Du Toit, 2003). On the other hand, being unemployed is considered a stress evoking event which can precipitate depressive disorder symptoms, diminished self-esteem and engagement in self-destructive behaviour (Funk et al., 2012; Paul & Moser, 2009).

The literature postulates that depressive disorder symptoms such as diminished sense of wellbeing, hopelessness and helplessness have long been linked with adolescents' risk-taking behaviours (Langille et al., 2012; Morojele et al., 2012). Adolescents with depressive symptoms are at risk of being propelled to risk-taking behaviours by failure to negotiate well the symptoms of depression. For instance, a study conducted by Langille et al. (2012) on Canadian adolescents established that depressive disorder in adolescents is associated with unprotected sex, multiple sexual partners and non-use of contraceptives. With regard to diminished self-esteem as a result of being unemployed and not studying further, adolescents with diminished self-esteem have been found to be susceptible to risky sexual behaviour, including having unprotected sex and multiple partners (Chilisa et al., 2013).

## 5.5 Summary of Discussion

There are various trends in involvement in risk-taking behaviours that have been identified and discussed in this study. However, what is of great importance is that results showed that there are no significant differences between ever having had sexual intercourse while intoxicated, when comparing the involvement of student adolescents and that of adolescents who were not studying. This is not in line with what was hypothesized in the current study. Adolescents who were not studying, and who are also unemployed, were expected to engage more in more risky sexual behaviour than their studying counterparts since being an adolescent who is not studying and also unemployed is associated with engagement in risk-taking behaviours (Mohasoa, 2010). There are significant findings emerging in this study that require special attention in the field of health policy, research and psychological practice. For example, special focus needs to be placed on the enforcement of laws governing under age alcohol use and cigarette smoking. Rigorous health policies need to be designed and implemented so that they correctly inform interventions that are aimed at raising awareness about the dangers of engaging in risk-taking behaviours. Gender differences that emerged in the current study highlight the importance of tailor made interventions that are designed directly to impact the target group. For example, male adolescents reported to have used alcohol and cigarettes more than females.

## **CHAPTER 6**

### **CONCLUSION**

#### **6.1 Introduction**

This chapter presents the conclusion of the current study. First, a summary of significant findings will be presented. This will be followed by a brief discussion of the contribution that this study has offered to the study of adolescents' risk-taking behaviours. Attention will be then turned to recommendations, limitations of the study as well as suggestions for future research.

#### **6.2 Summary of the Results**

The aim of the current study was to compare the relationship between substance use and risky sexual behaviour among adolescents who are at tertiary institution and those who are neither studying nor employed. Substances that were included in the study were cigarette, dagga and alcohol. Findings of this study revealed that adolescent substance use is the predictor of involvement in sexual intercourse while intoxicated. About 34% participants confirmed that they have ever engaged in sexual intercourse while intoxicated, with 27% indicating that substances influenced their decision to engage in sexual intercourse. Among substances included in this study, alcohol and dagga were found to be the best predictors of adolescents' engagement in risky sexual behaviour. On one hand, those participants who indicated having used alcohol, were found to be 10 times less likely to have used protection during sexual intercourse. On the other hand, participants who had smoked dagga were found to be 3 times less likely to use protection when engaging in sexual intercourse.

When comparing student adolescents and those who were neither studying nor employed, the findings of the present study showed no significant differences in engagement in risky sexual behaviour while under the influence of substances. Such results highlight that adolescents, irrespective of whether they are studying or not, are vulnerable to engagement in risk-sexual behaviour while intoxicated which exposes them to HIV/AIDS, STIs and unplanned pregnancy, to mention but a few. When the results of the relationship

between substance use and risky sexual behaviour were analyzed according to gender, they showed no significant differences. These findings are not in line with the general trend where male adolescents engage in risk-taking behaviours more than their female counterparts.

Findings pertaining to participants' involvement in substance use revealed that 40% have smoked cigarettes, 53% have drunk alcohol while 22.5% have smoked dagga. Cigarettes were found to be a predictor of the use of other substances (alcohol and dagga). For instance, those who had smoked cigarettes were 4 times more likely to have smoked dagga and drunk alcohol. With the exception of dagga smoking, significantly more males than females have ever used cigarettes and drunk alcohol in the current study. Analysis of the results on dagga smoking showed no significant differences between male and female participants in the current study. These results highlight the changing gender patterns on adolescent dagga smoking. Previous studies have shown that male adolescents usually surpass their female counterparts in using substances such as dagga. Thus, such results need to be taken into cognizance since they highlight the changing gender pattern in the nature of adolescents' involvement in dagga smoking. Significant findings emerged between student participants and those who were not studying when it came to drinking alcohol, with participants who were not studying reporting to have drunk alcohol more than their studying peers.

In the current study, it was found that age was a predictor of adolescents' substance use. Early age of onset was reported in all substances that were investigated in this study. The average age of onset for cigarette smoking was 12, with 15 as an average. A comparison of student participants and those who are not studying revealed significant early age of onset for alcohol use and cigarette smoking on those who were not studying; while a significant early age of onset for dagga smoking was indicated on student participants. An analysis of the results according to gender showed that more male participants than females reported a significant early age of onset for cigarette smoking. More female participants than males reported early age of onset for dagga smoking. The results of the current study further showed that alcohol drinking increases with age. Older adolescents were found to be 13 times more likely to have drunk alcohol than their younger counterparts.

With regard to risky sexual behaviour, 51% of adolescents who participated in this study reported ever having had sexual intercourse, 20% did not know their sexual partners for more than seven days before sexual intercourse, while 37% did not use protection during their recent sexual intercourse. Findings further revealed that the majority were classified as sexual risk takers. When comparing studying participants and those who are not studying, there were no significant differences in ever having had sexual intercourse. However, a significant difference emerged on the frequency of sexual intercourse, with a large proportion of participants who are not studying reporting to be more sexually active than their studying peers. Participants who are not studying were also found to be less likely to have used protection during their most recent sexual encounter.

In this study, marked gender differences emerged between male and female participants. Male participants were found to have ever had sexual intercourse more than females. They were also found to engage in multiple sexual partners more than female participants and less likely to have used protection during their last sexual intercourse.

With regard to age of onset for sexual intercourse, the average age of onset was 15 with 12 years as a minimum age. Student participants recorded early age of sexual intercourse more than participants who were not studying. Likewise, male participants in the current study reported an early age of sexual intercourse onset more than their female counterparts.

In concluding this section, the above results do not confirm the hypothesis of the current study. This is said because there were no significant differences in engagement in substance use and risky sexual behaviour between student participants and those that are neither studying nor employed in Pietermaritzburg. Thus, this study highlights that, firstly, the level of education and/or socio-economic privilege are not good predictors (immaterial) when it comes to substance use and risk-taking behaviours among adolescents. Secondly, the fact that there are no major differences among student adolescents and those that are neither studying nor employed is reflective that university students are part of wider communities they come from.

Adolescent substance use was found to be the predictor of engagement in risky sexual behaviour. The results were able to demonstrate that there were no significant

gender differences among the participants in the engagement in risky sexual behaviour while intoxicated. The results were also able to show that adolescents initiate the engagement in risk-taking behaviours during early adolescence. Such results suggest that early adolescence is the vulnerable stage when it comes to the initiation of risk-taking behaviours. It is also noteworthy to highlight the reported early onset of dagga smoking among female participants and the dominance of male adolescents over females in the engagement in risk-taking behaviours. Lastly, the results of the current study were able to demonstrate that adolescents were still vulnerable to risk-taking behaviours and that the age of engagement in such behaviours was constantly decreasing.

### **6.3 Unique Contribution of the Study**

In general, the current study contributed immensely to a body of knowledge about adolescents' involvement in risk-taking behaviours by comparing adolescents who are at tertiary institutions and those who are neither studying nor employed. According to the researcher's knowledge, no such study has been carried out. In particular, this study was able to demonstrate that adolescents engage in risky sexual behaviour while intoxicated regardless of whether they are studying or not studying. This is important in the field of adolescents' substance use policy and interventions. Given the high prevalence rate of HIV/AIDS in South Africa and poor decision making associated with being intoxicated, such results will assist in raising awareness about the danger that adolescents are facing as a result of engaging in risky sexual behaviour while under the influence of substances. This study also contributed by showing that age is the predictor of adolescents' engagement in risk-taking behaviours and that male adolescents tend to initiate cigarette smoking earlier than their female peers. Again, such findings are important since they highlight the importance of strengthening interventions and awareness campaigns targeting younger adolescents' involvement in risk-taking behaviours, and also interventions aimed at curbing early age of onset for cigarette smoking among male adolescents. The mammoth contribution of the current study may also be found in the indication that female adolescents reported early age of dagga onset than males. Such findings are of great significance because they highlight the need of channeling interventions aimed at curbing female adolescence dagga use to younger females since it is evident that they are the vulnerable group when it comes to early age of dagga smoking onset. Lastly, this study was

able to highlight the plight of adolescents who are neither studying nor employed. Highlighting challenges faced by adolescents from impoverished background may assist a great deal in informing interventions and future research aimed at improving their livelihoods.

#### **6.4 Recommendations**

In the light of the findings of the current study, the following recommendations can be made:

- Rigorous policies and interventions targeting adolescents' risky sexual behaviour need to be devised. Devising such measures is important as it is evident from the results of the current study that adolescents are prone to engagement in risky sexual behaviour while intoxicated.
- As the results showed that male adolescents engaged into risky sexual behaviour more than their female counterparts. Preventive psycho-educational interventions aimed at male adolescents' risky sexual behaviours need to be intensified.
- More interventions targeting female adolescents who are below adolescence need to be created since they indicated early onset of dagga smoking.
- Early age of onset was reported in almost all risk-taking behaviours that were studied in the current study. Thus, it is important for policy makers to devise policies that are aimed at informing proactive interventions targeting children and younger adolescents who are attending high school. This can be achieved if child and adolescent mental health is treated as one of the focal areas of national mental health policy.
- This study showed evidence of co-occurrence of risk-taking behaviours in adolescents, professionals and mental health practitioners working with adolescents should always screen for the presence of other forms of risk-taking behaviours.
- Findings of this study revealed that, similar to all people who are at this stage, adolescents who are at tertiary institution are also vulnerable to involvement in substance use and risky sexual behaviour. As such, university counselling authorities should develop appropriate preventive measures that are specifically designed to address adolescents' substance use and risky sexual behaviour.



- As it was mentioned in the literature review, there is a shortage of adolescent friendly mental health facilities in South Africa. There is a need to create these facilities for adolescents.
- Government should try to address the crisis of youth unemployment and lack of appropriate skills at policy level, which will in turn inform interventions at the grassroots.

## **6.5 Limitations of the Study**

The objective of this section is to highlight limitations of the current study. These limitations need to be taken into cognizance when interpreting the findings of this study. It is imperative to note that some of the limitations formed part of the discussions in chapter 3. The limitations are as follows:

- The study used a quantitative cross-sectional design, which does not demonstrate change over time (Berk, 2007). Usually the quantitative design also denies participants an opportunity of explaining subjective experiences in their own terms. (Babbie & Mouton, 2010). A qualitative design should have been considered because it allows participants to explain their subjective world in their own terms (Neuman, 2002).
- The study made use of a questionnaire with some responses as forced choice responses. Participants may under report if they are afraid of giving responses that are perceived as not conforming to the societal norms (Fisher, et al., 1993). However, control measures were put into place in order to cater for under reporting or over reporting.
- Due to budget and time constraints, the study employed convenient sampling method in extracting participants. This tempered with generalizability of the findings since the sample was not representative of the population.

## **6.6 Suggestions for Future Research**

The results of this study brought to the surface a myriad of issues relating to adolescents' involvement in substance use and risky sexual behaviour. Based on the findings obtained in this study, the following suggestions are made for future studies:

- Future research should tap into exploration of reasons behind adolescents' involvement in risk-taking behaviours despite known dangers.
- Future studies should intensely explore factors propelling adolescents to initiate risk-taking behaviours during early adolescence.
- In this study, female participants reported early age of onset for dagga smoking more than their male counterparts, as such, this gender pattern calls for further empirical exploration.
- More qualitative studies need to be conducted on adolescents' risk-taking behaviour. This will assist in gaining firsthand accounts of their subjective experiences of navigating the adolescent stage and its challenges.

## **6.7 Conclusion**

This current study was informed by a Health Belief Model as its theoretical framework, and it compared the relationship between substance use and risky sexual behaviour among adolescents at a tertiary institution and those who are neither studying nor employed in Pietermaritzburg. The study was carried out by employing cross-sectional quantitative research methods. A convenience non-probability sampling procedures were used in recruiting 400 participants, 203 (51%) were males and 197 (49%) females, while 200 (50%) were student adolescents and another 200 (50%) adolescents who were not studying. In terms of race distribution, the sample for this study was predominantly black (76%), followed by Indians (11%), Coloureds, (7%) and Whites (6%).

A self-administered questionnaire was used as a data collection tool. This questionnaire was adapted from a risk-taking behaviour questionnaire which was developed by Flisher et al. (1993) to study risk-taking behaviours of adolescents. The original questionnaire investigated a number of adolescents' risk-taking behaviours. However, for this study, only items relating to adolescents' cigarette smoking, dagga smoking, alcohol use and risky sexual behaviour were studied. Data were analyzed using SPSS windows, version 21. Descriptive statistics, including graphs and tables, were used in analysing data. The *Chi-square test* was used to determine relationships and differences between variables measured in nominal and categorical scales, while the *Wilcoxon-Mann-Whitney test* was used in analyzing continuous variables.

Findings revealed that substance use, especially dagga and alcohol, is the predictor of adolescents' engagement in risky sexual behaviour. The results of this study found no significant differences in the relationship between substance use and risky sexual behaviour among student adolescents and those who were not studying. Findings also showed no significant differences between male and female participants in engaging in risky sexual behaviour while under the influence of substances. These insignificant findings may be attributed to the complexity of the adolescent stage and the influences of multi-faceted psychosocial and biological factors. With the exception of gender and whether an adolescent was a student or not, there are other variables that were not deeply explored in the current study that may assist in further explaining such phenomena.

Furthermore, when analyzing adolescents' involvement in substance use, 40% indicated having smoked cigarettes, with 39% classified as heavy smokers. The early age of onset for cigarette smoking was reported on male participants and also on participants who were not studying. Male participants were found to be 17 times more likely to have smoked cigarettes than their female counterparts. With regard to alcohol use, the majority of participants in this study indicated having used alcohol. The results showed that student participants have ever used alcohol more than their peers who were not studying, however these results were not statistically significant. A significant early age of onset was also reported on alcohol and that alcohol use increased with age. About 22.5% participants reported ever having smoked dagga. No significant differences were found between genders in the current study. Female and also student participants reported statistically significant early age of dagga smoking onset.

This study has shown that adolescent risky sexual behaviour still requires special attention. More than half of adolescents who participated in this study reported ever having had sexual intercourse, and the majority was classified as high sexual risk. Participants who are not studying were found to be more sexually active than their studying counterparts; males were also found to have had sexual more frequent intercourse than their female peers. Early age of onset for sexual intercourse was significantly reported among students and among male participants. Male adolescents who participated in this study also reported engaging in multiple sexual partners and were less likely to use protection when engaging in sexual intercourse.

All in all, findings of this study may be useful to policy makers in devising appropriate preventive measures and interventions aimed at addressing adolescent substance use and risky sexual behaviour. Furthermore, the results of this research are more likely to be useful to adolescent mental health providers, both in tertiary education and the public health system, in informing psycho-educational and therapeutic interventions aimed at minimizing vulnerability and better assisting those already engaging in risk-taking behaviours. Results also revealed early age of onset for engagement in risk-taking behaviours, such results may assist in redefining and re-shaping interventions aimed at curbing adolescents' risk-taking behaviours to be inclusive of younger adolescents and children. Lastly, this study contributed to increased awareness of the plight of adolescents who are from previously disadvantaged communities and who, as a result of historical disadvantages, have to negotiate challenges brought by adolescence in the face of grim psychosocial difficulties.

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**APPENDICES:**

*Appendix A: Study Questionnaire*

**QUESTIONNAIRE**

**Instructions: Please be honest with your responses. Your answers are completely confidential. Do not write your name on this questionnaire.**

*This part of the questionnaire is concerned with demographic details*

1. Gender  male  female
2. Race  black  white  coloured  Indian
3. Age .....
4. Studying  Yes  No

*This part of the questionnaire is concerned with the use of tobacco, alcohol, and other drugs*

5. Have you ever smoked a whole cigarette?  
 Yes  No

**IF YES:**

- a. How old were you when you smoked a whole cigarette for the first time?  
.....years
- b. In the *past year* have you smoked a whole cigarette?  
 Yes  No
- c. During the *past month*, on how many days did you smoke cigarettes?  
.....days
- d. During the *past month*, on the days you smoked, how many cigarettes did you smoke per day?  
.....cigarettes
6. Have you ever used alcohol (including beer and wine), other than few sips?  
 Yes  No

**IF YES:**

- a. How old were you when you used alcohol for the first time other than a few sips  
.....years
- b. In the *past year*? Did you use alcohol other than a few sips?  
 Yes  No
- c. During the *past month*, on how many *days* did you have at least one drink of alcohol?  
.....days
- d. During the past *14 days*, on how many days did you have 5 or more drinks on one occasion?  
.....days
- 7. Have you ever smoked dagga on its own?  
 Yes  No

**IF YES:**

- a. How old were you when you smoked dagga on its own for the first time?  
.....years
- b. In the *past year*, did you smoke dagga on its own?  
 Yes  No
- c. During the *past month*, on how many days did you smoke dagga?  
.....days
- d. During the *day*, how many times do you smoke?
- 8. Have you ever used the drug known as P-ASV230?  
 Yes  No

**IF YES:**

- a. How old were you when you used it for the first time?  
.....years
- b. In the *past year*, did you use it?  
 Yes  No

- c. During the *past month*, on how many days did you use it?  
.....*days*

***This part of the questionnaire is concerned with sexual behaviour***

9. Have you ever had sexual intercourse? ( This means intimate contact with someone of the opposite sex during which the penis enters the vagina [ female private parts])  
 Yes  No

**IF YES:**

- a. How old were you when you first had sexual intercourse?  
.....*years*
- b. With how many different partners have you had sexual intercourse in the last 12 months?  
.....*partners*
- c. How long ago did you last have sexual intercourse?  
.....*days* .....*weeks* .....*months* .....*years ago*
- d. On the *last occasion* that you had sexual intercourse, had you known your partner for more than 7 days?  
 Yes  No
- e. On the *last occasion* that you had sexual intercourse, did you or your partner use any form of protection to prevent pregnancy or diseases?  
 Yes  No

10. Did you ever have sexual intercourse while under the influence of any drug? (dagga, alcohol or cigarettes)  
 yes  No

**IF YES:**

- a. Did drugs influence you to have sexual intercourse while intoxicated?  
 yes  No

- b. On the *last occasion* that you had sexual intercourse while under the influence of drugs, did you or your partner use any form of protection to prevent pregnancy or diseases?

yes  No

**Thank You for Your Time!!!**

## Appendix B: Copy of Ethical Clearance



16 November 2017

Mr SS Nene 202518863  
School of Applied Human Sciences  
Pietermaritzburg Campus

Dear Mr Nene

Protocol Reference Number: HSS/1173/2010 H

Project Title: A comparison of the relationship between substance use and risky sexual behaviour among adolescents at the University of KwaZulu-Natal, Pietermaritzburg and post-matric unemployed adolescents

**Recertification Approval**

This letter confirms that you have been granted Recertification Approval for a period of one year from the date of this letter. This approval is based strictly on the research protocol submitted in 2010.

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study must be reviewed and approved through the amendment /modification prior to its implementation. Please quote the above reference number for all queries relating to this study. PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years

Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Dr Shamila Naidoo (Deputy Chair)  
Humanities & Social Sciences Research Ethics Committee

/pm

cc. Supervisor: M Kometsi  
cc. Academic Leader Research: Professor Doug Wassenaar  
cc. School Administrator: Ms Nondumiso Khanyile

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Humanities & Social Sciences Research Ethics Committee  
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Website: [www.ukzn.ac.za](http://www.ukzn.ac.za)

1910 - 2010  
100 YEARS OF ACADEMIC EXCELLENCE

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*Appendix C: Information Sheet for Participants*

**INFORMATION SHEET**

Prospective Participant

My name is Sabelo S. Nene, I am a Clinical Psychology Masters student at University of KwaZulu Natal, Pietermaritzburg. In order to fulfill requirements of the Master's degree, I have to conduct a research. The research that I am conducting is about the comparison of the relationship between substance use and risky sexual behaviour among adolescents who are at tertiary institution and adolescents who are currently not studying and unemployed.

I am requesting your participation in this research. Measures have been put in place to protect your privacy since the responses will be anonymous and confidential. There are no monetary gains involved, however, the findings of the study will assist in informing interventions that are targeting adolescents. Should you wish to withdraw at any time during the study, you are at liberty to do so. In the event of secondary victimization, the university's Counselling Centre will be at your assistance.

Your Participation will be highly valued.

Yours Sincerely

Sabelo S. Nene

[Sabelopsych@gmail.com](mailto:Sabelopsych@gmail.com)



*Appendix D: Informed Consent Form*

**Informed Consent Form**

I..... consent to participate in the study about the comparison of the relationship between substance use and risky sexual behaviour among adolescents who are at tertiary institution and adolescents who are currently not studying and unemployed. I understand that I have voluntarily agreed to participate and that there are no monetary incentives which I am entitled to get for my participation. I have been informed that should I feel the need to withdraw my participation, I am fully entitled to do so. I have been also informed that my name will not be linked with my responses to protect my privacy and confidentiality.

Signature.....

Date.....

## Appendix E: Turn it in (Anti-plagiarism) report

Turnitin Originality Report

Page 1 of 142

 Turnitin Originality Report

Dissertation by Sabelo Nene

From Dissertation (Masters Subsequent  
CW Thesis 2017)

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