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A QUASI-EXPERIMENTAL COMPARATIVE CROSS-SECTIONAL STUDY TO COMPARE THE DISCLOSURE RATES OF SENSITIVE BEHAVIOURS OF UNIVERSITY OF KWAZULU-NATAL STUDENTS

A dissertation submitted to the University of KwaZulu-Natal, School of Applied Human Sciences (Psychology) in fulfilment of the requirement for the degree of Social Sciences, Masters

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Abstract

Firstly, this research aimed to understand what behaviours are considered sensitive or private by university students (N=306) in respect of disclosure in the research context. A total of 71 items were extracted by factor analysis: 20 sensitive items, 26 related non-sensitive items and 25 non-related non-sensitive items. Differences in sensitivity were noted for gender and race, reported below. Furthermore, a three-phase exploration of data collection methods was used in determining which self-report method is most valid and reliable when researching sensitive topics. A quantitative experiment compared the effectiveness of the Unmatched Count Technique (Type I), Self-Report Questionnaires and Audio Computer-Assisted Self-Interviews, in terms of their ability to elicit honest answers when dealing with the sensitive topics (N=410). This section of the study used pairwise tests of proportions by Winks statistical software. The sensitive topics under investigation in this study are condom use,HIV/AIDS as well as relationships such as transactional and multiple and concurrent partners.The results of this study, reported below, indicate pairwise significant differences between the SRQ, ACASI and UCT Type I. Additionally, the Unmatched Count Technique (Type I), Self-Report Questionnaires and Audio Computer-Assisted Self-Interviews were compared in terms of Socially Desirable Responding scores as well as experience of participation. No statistically significant differences were obtained for overall scores across data collection methods for SDR and experience of participation.

Table of Contents

7

LIST OF TABLES AND FIGURES

Abbreviations and Symbols

ACASI	Audio Computer Assisted Self Interview
AIDS	Acquired Immune Deficiency Syndrome
CASI	Computer Assisted Self Interview
FTFI	Face-to-Face Interview
HEAIDS	Higher Education HIV and AIDS Program
HIV	Human Immunodeficiency Virus
ICVI	Informal Confidential Voting Interview
MCP	Multiple and Concurrent Partnerships
PMB	Pietermaritzburg
RRT	Randomised Response Technique
SRQ	Self-Report Questionnaire
UCT	Unmatched Count Technique
UKZN	University of KwaZulu-Natal
UNAIDS	Joint United Nations Programme on HIV/AIDS

∗	indicates significant results (Alpha = 0.05)
∗∗	indicates missing results

CHAPTER 1 Introduction

Across all disciplines, researchers aim to produce data that not only has discriminative power but produces valid and reliable results (Terre Blanche, Durrheim, & Painter, 2006). However, the problem of the validity of self-reported data presents an important challenge to social science, public health and the socio-medical sciences. This problem has prompted the development of a number of differing data collection methods such as the Randomised Response Technique (RRT), Unmatched Count Technique (UCT), Informal Confidential Voting Interview (ICVI), Face-To-Face Interview (FTFI), and Audio Computer Assisted Self-Interview (ACASI) rather than relying on the standard Self Report Questionnaire (SRQ). Research in many areas of Social Sciences have relied primarily on the latter self-report data collection method, particularly surrounding sensitive behaviours (Fenton, 2001) and research efforts have over time focused on addressing this issue.

Sensitive behaviour research has a tendency to produce higher non-response rates and large measurement error (LaBrie & Earleywine, 2000). This may be as a result of several factors; data collection method, survey wording and format as well as social desirability responding (SDR). SDR, in particular, is the participants' tendency to be less than truthful with information that may depict them negatively (LaBrie et al., 2000). As a result, studies using self-report methods may have questionable levels of validity and reliability (Newman, 2002).

This research forms part of a suite of related studies, as a portion of a larger PhD study, with a central focus on comparison of differing self-report methods. Firstly, the study will attempt to improve the current understanding of what is considered sensitive behaviour by developing a scale of sensitive behaviour as rated by university students. This will be followed by a comparison into the efficiency of data collection methods in obtaining self-disclosure data on sensitive behaviours, as an analogue of reliability and validity. Each self-report method will be followed by a social desirability scale as well as a measure of experience of participation and exposure to the different survey methods to improve the current understanding and advance self-report methods. The importance of reliable and valid data for social science, public health and medical research in the era of the HIV epidemic is key for prevalence studies, intervention planning and monitoring and evaluation (HEAIDS, 2010; Makiwane & Mokomane, 2010). This is further complicated by the sensitivity of risk behaviours that underpin the epidemic.

CHAPTER 2 Literature Review

Threats to the accuracy of data collection methods are continuously changing, requiring on-going improvement of methods as well as increased awareness surrounding the impact which these threats may have on data. Section 2.1 is a discussion surrounding issues of defining and understanding what 'sensitive behaviour' in research is, followed by a discussion into sensitive behaviours such as sexual risk behaviours (Section 2.2). The literature will further highlight critical threats in research which result in error, in addition to presenting each self-report data collection methods, including those to be investigated in this research (Sections 2.3-2.4). This overview aims to highlight the efficacy of various data collection methods in collecting research surrounding sensitive behaviors. Each data collection method has advantages and disadvantages associated with its use. Thus, data collection methods remain under investigation with the aim of evaluating performance in terms of levels of disclosure by participants.

2.1 Sensitive Behaviours

Firstly, sensitive research and the definition of sensitivity in research are often terms which are problematic in social science research. In addition, authors often use the word sensitivity and neglect the definition as it is an understandable and commonly used word (Dickson-Swift, James, & Liamputtong, 2008). This has resulted in a broad and varied understanding of the word as researchers find that many subject topics fall in the category of sensitive research. Sieber and Stanley (1988, in Lee & Renzetti, 1990) originally defined research that results in direct or potential consequences as a result of participation in research as socially sensitive research, while Dickson-Swift et al. (2008) accepts that sensitive research encompasses all activity which is threatening or harmful in some form. Thus for the topic to be considered sensitive, the research must result in direct and/or potential consequences for all involved especially the researcher and participants

Lee and Renzetti (1990) originally proposed three spheres of sensitivity which highlighted issues surrounding the research topic, consequences of research and situation. However, with the increased recognition of psychological barriers, defining sensitive topics requires encompassing all issues which are intrusive on areas that may be private, sacred, intimate, shameful or stigmatising by participants (Dickson-Swift et al., 2008; Lee & Renzetti, 1990).

As a result, for the purposes of clarity, there are now currently four spheres as revised in the literature: (a) research into an individual personal/private experiences; (b) research into socially deviant behaviour; (c) religious research and finally (d) research which intrudes on the interests of powerful persons (Dickson-Swift et al., 2008).

These authors do, however, agree that the participants of different social groups may themselves vary in opinion on the degree of sensitivity of each sphere. These differences may be as a result of age, race, culture, religion and situation (Dickson-Swift et al., 2008). Although cultural norms differ around the world, most sensitive behaviours seem to be those that are socially censured, stigmatised and those for which strong pressure to conform to societal norms causes self-reports to be loaded with bias, particularly around social desirability (Makiwane & Mokomane, 2010). As a result, research on sensitive topics may elicit increased levels of mistrust as well as concerns about anonymity and personal protection. This generates a concern for researchers and can be problematic for research dealing with the honesty and validity of self-report survey data in reflecting the activities of people (La Brie & Earleywine, 2000).

While the need for reliable and valid data is the critical research issue addressed in this research study, understanding how sensitive behaviour is distributed in the population will be discussed below.

2.2 Sexual Behaviours

One of the main challenges of research into the HIV/AIDS pandemic is the discrepancy between the knowledge of HIV/AIDS and accurate accounts of sexual risk behaviour. Accurate prevalence data is fundamental in creating reference points for the research, monitoring and evaluation of sensitive behaviours, continued tracking of disease and death as well as critical in identifying risk populations. Available prevalence data becomes a critical component of research, with a focus on associations in behaviour and action that results in increased risk of infection, further motivating the improvement of data collection method.

The U.S. National Risk Behaviour Surveys indicate that more than 6% of adolescents have had sex before the age of 13 while 40% of participants did not use a condom during their last sexual encounter (Prejean, Song, Hernandez, Ziebell & Green, 2011). Additionally, 15% of participants have had sex with four or more individuals in the past 30 days, 22% have been

intoxicated during sex or intoxicated which resulted in sexual intercourse (Prejean et al., 2011). More importantly, over 16% of participants to complete the Self-Report Questionnaire reported having never been taught about HIV or AIDS (Prejean et al., 2011).

A local South African Cape Town SRQ study reflects that 48% of participants had not used a condom in their last sexual encounter with a reported 30% choosing to rarely if ever use a condom (Kalichman & Simbayi, 2004). Additionally; 30% of participants had reportedly had multiple partners with 6% having 3 or more partners. While a total of 54% participants had previously been intoxicated resulting in regretted sexual intercourse (Kalichman & Simbayi, 2004). At the time of the study, 31% of women reported sexual assault by their current partner.

Sexual risk behaviours increase the likelihood of contracting HIV/AIDS substantially. Sexual risk behaviours have been defined as any sexual activity which results in the increased exposure to Sexually Transmitted Infections (STIs) including HIV (Johnson, Dorrington, Bradshaw, Pillay-Van Wyk, & Rehle, 2009). These behaviours include unprotected sex, multiple sexual partners, transactional sex, forced or coerced sex and the use of alcohol or drugs which results in sexual intercourse.

2.2.1. Condom use

Condoms have been shown to be the most effective family planning method as well as the easiest means to prevent and protect against HIV/AIDS infection (Holland & French, 2012). They are also easily available, cost effective and instructionally easy to use. This has been confirmed by the World Health Organization (WHO) as well as the South African government through continued commitment to increasing individual awareness and condom availability (Hensel, Stupiansky, Herbenick, Dodge, & Reece, 2011; Peacock, Redpath, Weston, Evans, Daub, & Greig, 2008). The South African National Strategic Plan (NSP) proposed a significant increase in condom availability by tertiary institutions, with the aim of steadily increasing condom distribution to students each year (Hensel et al., 2011; Holland & French, 2012). However, condom use amongst individuals remains problematic.

Firstly, a study by Schuster (1998) reported that approximately 64% of participants used a condom the first time they have sex with a new partner. However, only a minority (28%) of

participants continue to use condoms every time they engage in intercourse, while the majority of participants (37%) never use a condom (Schuster, 1998). The remaining 35% of participants often irregularly used a condom (Schuster, 1998). This lack of consistent condom use was present in both female and male participants (Schuster, 1998). Secondly, a study by the Centre for AIDS Development Research & Evaluation (CADRE) of 10,000 South African participants established that 22% of males but only 15% of females reported having used condoms the first time they had sex (Peacock et al., 2008). In addition studies by Schuster (1998) and Hensel et al., (2011) further reflect that the cost of condoms is often not the problem. Problems with condom use include continuation of intercourse without condom (2.6%), slippage during intercourse or ejaculation (4.1 - 6.5%), slipping off or breakage (5.6%) or experiencing all of them at some point (10.9%) (Hensel et al., 2011).

The difference between the genders has been attributed to several reasons. Firstly, previous research has shown condom use is affected largely by the awareness of different condom strategies .i.e. male and female condoms (Hensel et al., 2011). Males are most often inclined to use male condoms, instead of other forms of contraception and this may be due to lack of awareness of the effectiveness and distrust of the contraceptive method (Meekers & Richter, 2005). Meekers and Richter (2005), as a focus on female use of condoms, highlights that those women who are aware of female condoms are largely motivated to use female condoms as a means of protecting themselves against unwanted pregnancy as well as STI/HIV.

Secondly, studies show that males and females with more traditional attitudes toward gender roles often have negative ideas and beliefs towards condoms and therefore use them inconsistently (Peacock et al., 2008). In particular, South African males often associate condom use with discomfort, distrust in relationships as well as undesired interruption during sexual intercourse (Meekers & Richter, 2005; Peacock et al., 2008). These beliefs are also held by women. Among women condom use beliefs vary in accordance with racial background as well as marital status (Meekers & Richter, 2005). The risk of infection is often not perceived in marital relationships. Thirdly, often as a result of condom beliefs/ideas, there are varying results shown that condom use may differ for individuals in casual and monogamous relationships (Holland & French, 2012). Married females were less likely than non-married, sexually active females to initiate the use of a condom, while results for males vary substantially across race and relationships status (Meekers & Richter, 2005).

Descriptive statistics regarding condom use have been found to be problematic in their accuracy and individuals' truthfulness in report. Personal beliefs and stigmas surrounding condom use further impact the rate of disclosure as participants become concerned with how the researcher perceives their actions (Holland & French, 2012). It is therefore necessary to better understand which data collection method will promote truthfulness by participants as accurate knowledge on the current and past condom use will assist in creating and implementing effective intervention programs.

2.2.2. Multiple and concurrent partnerships (MCP)

Within South Africa, multiple and concurrent partnerships (MCP) has been given considerable attention due to the increased reporting of this behaviour and the direct impact that it has on individual risk of infection (Ho-Foster, Laetsang, Masisi, Anderson, Tlhoiwe, Cockcroft, & Andersson, 2010; Peacock et al., 2008). Multiple and Concurrent Partnerships (MCP) most commonly occur in two instances: firstly, in long term partnerships with separate 'on the side' casual partner/s; or secondly, overlapping sexual relationships with several individuals over the same period of time (Ho-Foster et al., 2010; HEAIDS, 2008). In MCP, risk of infection dramatically increases for all partners if one individual in the network contracts HIV. As a result, MCP has widely been acknowledged as a vital driver of the HIV and AIDS epidemic (Peacock et al., 2008; Shumba, Mapfumo, & Chademana, 2011).

MCP as measured by Carter et al. (2007, in Ho-Foster et al., 2010) indicated that multiple and concurrent partners are most commonly defined as three or more sexual partners in the past year, with an average of 23% of participants reporting MCP. Ample evidence in the literature suggests that changing attitudes towards sexual exploration further affects the prevalence of MCP. Studies by HEAIDS (2008), Ho-Foster et al. (2010) and Peacock et al. (2008) found that the majority of the young people felt that that there was nothing wrong with having multiple partners despite their knowledge of the increased risk of HIV and AIDS. Similar findings by Shumba et al. (2011) found that in a sample of undergraduate students', high levels of knowledge about HIV failed to deter concurrent relationships and unprotected sexual practices. Attitudes such as these further escalate MCP networks and in turn increase the risk of infection.

Within a sample of KwaZulu-Natal participants, aged 18-62, 98% indicated that at some point in their lives, they had engaged in MCP (Shumba et al., 2011). While literature indicates that males do tend to report partaking in MCP more than females, this sample demonstrated that prevalence of MCP occurs among married and unmarried persons as well as by both male and females (HEAIDS, 2008; Shumba et al., 2011). Reasons for partaking in MCP are affected by social, cultural, and economic factors. Changing attitudes of women with regard to sexual practices has resulted in an increase of MCP, as women benefit from the wealth and generosity of their partners (Shumba et al., 2011). Women indicate that partaking in MCP, in most instances, no longer means being the victim but rather a way in which to exploit more than one partner. This finding is supported in literature by Shumba et al. (2011) and HEAIDS (2008) which found that populations of female students, located in Gauteng as well as KwaZulu-Natal, had engaged in MCP in hope of receiving benefits from their partners such as fashionable clothing, food or rent.

Motivations by young men for engaging in MCP has been shown to be positively linked to gender related norms (Jana et al., 2008). Depending on the country, normed male behaviour creates an expectancy to follow social groups by engaging in MCP as majority of young men grow up believing that their identity as a man is defined by their sexual competency (Jana et al., 2008; Shumba et al., 2011). These notions of masculinity may also reinforce gender roles that limit the ability of men and women to engage in safer sexual practices and thus increases their risk of HIV infection (Shaik, 2012; Jana et al., 2008).

As indicated above, the occurrence of MCP is becoming increasingly common and subject to social norms which provide boundaries for its practice by males and females. While the behaviour does occur, the reporting of Multiple and Concurrent Partnerships remains socially and morally disapproved resulting in varying degrees of SDR by study participants. Normed behaviour effects SDR and the disclosure of MCP, as participants do not honestly report their behaviour dependent of the norms acceptable for their age, gender, race, culture and society. Most commonly, disclosure of the occurrence of MCP by male participants is often over-reported, particularly in areas where the practice of MCP is culturally accepted. Additionally, disclosure by female participants varies with the under-report of Multiple and Concurrent Partnerships in terms of the occurrence as well as the duration of MCP behaviour. As a result, prevalence data surrounding MCP is often adjusted for SDR by female populations.

2.2.3. Transactional sexual relationships

Transactional sexual relationships often come about as a result of sexual intercourse in relation to payment or financial support (Shaik, 2012; Shefera, Clowesa, & Vergnanib, 2012). Commonly confused with prostitution, individuals in transactional sexual relationships do not exchange financial support at every sexual encounter but rather maintain more traditional relationships with excessive gift exchange (Shaik, 2012; Shefera et al., 2012). These partnerships commonly include older men in what is perceived to be influential or financially well-off positions, who provide the material benefits to women (Shefera et al., 2012). In some instances, these couples do not overtly agree to exchange sex or romantic pleasures for financial gains as it is an expectation of gendered roles for men to give the women gifts (Jana et al., 2008). Similarly, studies by HEAIDS (2008) and Shefera et al. (2012) reported that the effect of gender related norms on attitudes of students towards transactional sexual relationships, with 6% of a UKZN sample population agreeing that it is acceptable to be in a transactional relationship to support their studies.

There has been a substantial increase in transactional sex among young females with a reported total of 18.5% in 2005 to 27.6% in 2008 (Ridgard & Struthers, 2009). Transactional sex relationships are stereotypically marked by substantial age differences between partners otherwise known as the "sugar daddy effect" (Jana, Nkambule, & Tumbo, 2008). While two widely differing and unrelated relationship contexts, individuals in transactional sexual relationships can simultaneously be in MCP. As a contributing risk factor for HIV, women in these relationship contexts often feel pressured to not use condoms by their sexual partners, even despite previous intentions to exercise safe sexual practices (Abels & Blignaut, 2011). Insecurity about the relationship or sexual intimacy may further cause females to avoid discussions of condom use in order to prevent rejection (Abels & Blignaut, 2011).

The reporting of transactional sex relationships in term of frequency and duration is often misreported due to SDR with strong perceived social pressure to conform to norms resulting in high bias in self-report data (Jana et al., 2008; Peacock et al., 2008). Studies however agree that males are more likely to have and report transactional sex relationships then females (Peacock et al., 2008). In addition, fewer instances of older women have or report sexual relationships with younger males (Jana et al., 2008). This may imply under-reporting by women more than men (Jana et al., 2008).

2.2.4. Sexual violence

Rape and a range of sexual coercive behaviours are experienced by both male and females (Sampson, 2002). Sexual coercion is the act of using pressure or force to have sexual contact with someone against his or her will (Struckman-Johnson, 2003). It is often confused with rape; however, the pressure used in sexual coercion can include physical, emotional and verbal pressure to have sexual intercourse and not the physical action of forced intercourse (Shaik, 2012). Sexual coercion that is most frequently used includes alcohol, drugs and lying; followed closely by physical coercion tactics such as hitting, kicking and slapping (Struckman-Johnson, 2003).

Approximately, a total 70% of participants report having been sexually coerced or have used sexual coercive behaviour at some time (Walsh, 2008). In a study by Struckman-Johnson et al. (2003), the most frequent use of sexual coercion tactics included sexual enticement (39% - women and 57% - men) as well as alcohol use (21% - women and 31% - men) Additionally more women (12%) than men (2%) reported having intentionally sexually coerced someone else (Struckman-Johnson et al., 2003). Nevertheless, coercive sex is not reported as rape as it holds its own stigmatization as a victim (0.8%) (Jewkes, 2009). Additionally, victims often do not feel that they can report sexual coercion as a crime.

Rape is the act of sexual assault initiated by one or more individuals with the intention of unconsented sexual intercourse with another person (Sampson, 2002). Women have been shown to have significantly higher admitted rape rates than men as documented cases of male victims is limited (Mohammadkhani et al., 2009). In total, it is estimated that fewer than 5 per cent of victims of rape or attempted rape are willing to report it (Sampson, 2002), however, in a study by Struckman-Johnson et al. (2003) a total of 22% of 355 women and 16% of 268 men at a university reported being raped while on a date. Studies by Struckman-Johnson et al. (2003), Jewkes (2009) and Mohammadkhani et al. (2009) indicate that while victims are willing to tell someone close to them, reporting the assault to authority figures is often met with fear for stigmatization and feelings of shame. As a result, low reporting of this sensitive behaviour, by males and females, may result in inadequate assistance measures. Most participants also admitted to having knowledge of who their perpetrators were.

Within African countries, social acceptance and stigmatisation of sexual coercion and rape crimes are often a result of existing double standards on sexual behaviour of men and women (WHO, 2012). Past gender norms has shown that women with aggressive sexual behaviour are negatively labelled and stigmatised (WHO, 2012). As a result, in many settings acts of sexual assault are considered acceptable male behaviour and are not blamed for their behaviour (WHO, 2012). Both males and females fall victim to gender norming. Women, in particular, are less likely to perceive forced sexual interaction as sexual coercion or rape if the perpetrator is someone close to them and especially when it occurs in a relationship (WHO, 2012).

Research focused on sexual coercion and rape frequently centres on females due to the reported frequency of sexual assault perpetrated against them. In many surveys, only females are questioned as victims while men are assumed to be the perpetrators (Struckman-Johnson et al., 2003). All around the world, individual's experience of sexual coercion and rape include receiving unwanted sexual touch to having penetrative sex (Jewkes, 2009). For most parts, perpetrators are believed to be men and are known by the victim rather than strangers. Due to the perceived stigmatization of reporting sexual coercion or rape, little is known about the frequency of male victims (Struckman-Johnson et al., 2003). Men often reconstructed such experiences as pleasurable and infrequently regard women as being the sexual perpetrator (Mohammadkhani et al., 2009). It is however clear that both males and females are perpetrators as well as victims of sexual coercion and rape. It is therefore vital to understand and address the issues with self-report data collection methods as a platform for victims and perpetrators to honestly report the occurrence of this behaviour.

2.2.5. Intoxication

Intoxication is generally the excessive use of alcohol and drugs in various degrees, subjectively by each person (Bianchi, Meng, Deprez, Temmerman, Welte, Hens, & Delva, 2005; Orchowski, Mastroleo, & Borsari, 2012). The use of drugs and alcohol is strongly tied to a cultural expectation that drinking is necessary in enjoying college experiences. It is such that, students may begin use after enrolment or merely continue to explore these behaviours during college (Castilla, Barrio, Belza, & de la Fuente, 1990). Substance use among certain

populations, particularly college students, has been associated with high incidence of sexual risk behaviours (Morojele et al., 2004). These behaviours result in higher occurrences of traffic accidents, violence, delinquency and casual sex encounters (Bianchi et al., 2005; Castilla et al., 1999).

Issues such as poly drug use, which is defined as the use of multiple substances within a time period, further intensify sexual risk behaviours (Krebs, Lindquist, Warner, Fisher, & Martin, 2009). The most commonly reported poly drug use includes a combination of tobacco, alcohol, marijuana, cocaine, ecstasy and heroin. Poly drug users are prevalent around the ages of 18 to 28 with past research making many references to club, dance and party-like settings (Krebs et al., 2009). This excessive intoxication acts on the central nervous system to reduce inhibitions, and consequently, increases people's likelihood of engaging in sexual risk behaviours (Morojele et al., 2004). This is true for both males and females. The subsequent actions of poly drug use are often regrettable and then deemed embarrassing or stigmatising (Orchowski et al., 2012).

Intoxication before sex has been shown to have the effect of increasing sexual risk behaviours including unprotected sex, agreement to engage in sexual activity with new partners or engaging in unplanned sexual activities as well as unprotected sexual practice (Orchowski et al., 2012). Sexual risk behaviour accounts for a large number of opportunities for acquiring HIV infection, and alcohol use has been shown to increase high-risk sexual behaviour (Bianchi et al., 2005; Castilla et al., 1999). Alcohol use in college students significantly increases the risk for experiencing a number of sexual consequences (Orchowski et al., 2012).

Numerous studies have focused on the association between intoxication and sexual risk behaviour with varied results. While respectively alcohol, drug and sexual risk behaviours contribute to the global burden of disease, connected sexual risk behaviours as a result of excessive intoxication contributes to the spread of sexually transmitted infections, HIV infection and AIDS (Bianchi et al., 2005; Castilla et al., 1999). While some studies have found a significant relationship between alcohol/drug consumption and unprotected sex, others have not (LaBrie et al., 2000; Morojel et al., 2004). Dingle and Oef (1997, in LaBrie et al., 2000) reviewed 20 articles, 35% of these studies supported the association between using alcohol and sex while 65% failed to support the hypothesis.

In a study by Orchowski et al. (2012), 9% of participants reported regretting a sexual experience that occurred after consuming alcohol and/or drugs within a week of the act, with a further 21% of participants reporting regretting alcohol and/or drug-related sexual experiences in the past year. Additionally, college students tend to overestimate the number of disinhibition substances they can consume without experiencing negative consequences (Morojele et al., 2004). While in a study by Kerbs et al. (2009) and Orchowski et al. (2012), over 26% of students reported poly drug use in the past year including statistics demonstrating that more than 1 in 10 young adults aged 18 to 24 are heavy drinkers, with almost 2 in 5 binge drinking.

A study on the population of University of KwaZulu-Natal (HEAIDS, 2008) demonstrated that alcohol consumption (more than once a week) by students was positively linked to higher exposure to casual sex and unsafe sexual practices (6%). Occasional high levels of alcohol intake, binge drinking, were reported by a third (32%) of the student sample in the past month. From this study a notable campus culture of excessive drinking was exhibited by students, particularly on weekends. While this study did not measure drug use in conjunction to alcohol consumption, 9% of students reported recreational drug use as well as expressing an overall acceptance of marijuana use.

While the issues of drug and alcohol use are devastating, there continues to be increasing connections to reoccurring problems of sexual assault. While past data has primarily focused on women as the victims of sexual assault, little focus is given to men as the victim and women as perpetrators (Krebs et al., 2009). As previously discussed, sexual coercion tactics used most frequently included alcohol, drugs and lying (Shaik, 2012). Terms such as incapacitated sexual assault refers to occurrences where the victim was unable to legally give consent as a result of intoxication while alcohol and/or drug facilitated assault refers to purposely giving alcohol and/or drugs to a victim without his or her knowledge with the intention to assault, physically or sexually (Krebs et al., 2009). The Core Alcohol and Drug Survey 2005 (Krebs et al., 2009) reported 82% of students whom while under the influence of alcohol and/or drugs experienced unwanted sexual interaction within a year. However, no distinction was made in this survey between individuals who voluntarily consumed alcohol and/or drugs and unconsented intoxication. Given the grave consequences of alcohol and/or drug use, documenting the magnitude of substance use and its consequences among college

students may assist the effort to target and reduce these problems as well as serve as a baseline to measure the progression and effectiveness of intervention methods.

2.3. Threats to Validity, Reliability and Rigour of data collection methods

Research on sensitive behaviour is particularly problematic due to error resulting in problematic reliability and validity of data (Dalton, Wimbush & Daily, 1994; La Brie et al., 2000). While the reality is that individuals around the world engage in sensitive behaviors, it is often these behaviors that are most problematic as participants struggle to recall all their past behavior or deliberately misreport. The resulting inaccuracy of reports can be affected by the respondent, data collection method and effects of researcher bias(Catania et al., 1990). There is however, a great need to investigate the role that data collection methods play in researching issues that are sensitive and risky.

With the goal of providing meaning and reliable data for future interventions and programs that will assist in better understanding sensitive issues, self-report data collection methods continue to be problematic despite continued research as a result of bias. The result of which leads to the questioning the validity and reliability of the self-reported measures as all data interpreted with great caution. While researchers aim for complete disclosure from participants, threats to validity and reliability which result in errors are often detected in research. These errors may include:

1. Participants not understanding an items meaning
2. Not agreeing on the sensitivity of the item
3. Considering the item not sensitive at all
4. Not understanding the survey instructions
5. Often, participants feeling uncomfortable sharing sensitive information
6. Refusal by participants to disclose behaviour
7. Issues of memory recall
8. Misinterpreting the item because it has unfamiliar terms
9. Participant may be answer items when its context is not fully explained
10. Social Desirable Responding

The use of self-report methods continues despite apprehensions about error affecting results as practical and ethical considerations affect the extent to which additional direct assessment methods can be used. The following issues will be addressed within this study:

2.4.1. Researcher effects

The researcher may affect the answers given in several ways. Firstly, the researcher may give participants unintended cues resulting in the participant answering what they think is expected of them as opposed to the truth (Langhaug et al., 2010). These cues may also affect the degree of perceived privacy and trustworthiness which the participant experiences in the study (Catania et al., 1990). Privacy and trustworthiness are of particular importance in sensitive studies as participants' responses may rely heavily on the interaction between the participant and researcher (Catania et al., 1990). Various data collection methods differ in the degree of contact between the researcher and participant. This has resulted in contradictory views on what the level of contact between the researcher and participant should be.

Factors such as age, gender and race of the researcher may also have an unintended influence on participant responses (Catania et al., 1990). Female participants, for instance, under-report sensitive behaviour to male researchers, while male participants are more likely to over-report sensitive behaviours to female researchers. With the aim of controlling for error resulting from these factors, expert training will have been used to negate error measurement (Catania et al., 1990).

2.4.2. Data Collection method - Language/format effects

In all research the terminology or the way in which words are structured within the survey may assist or hinder participants' understanding. This is relevant in sensitive related research as terminology may mean different things to different participants (Catania et al., 1990). Terminology issues focus on a) when the participant does not understand the definitions as used in literature, b) participants have no understanding of the literature definition /or the standard label (illiteracy), or c) where the terminology used elicits a response due to the perceived degree of complexity (Catania et al., 1990). Due to the differences in the understanding of terminology, the participant may answer what they deem as correct rather

than clearly understanding what the researcher is asking of them (Catania et al., 1990). For instance, participants who are unable to understand terminology such as heavy petting, there may be a need for further explanation. The language and format used becomes essential as it may produce a particular response from participants if worded incorrectly.

Further, related questions placed closely together may increase the recall of information but also result in greater SDR (Catania et al., 1990). Issues of illiteracy become problematic in data collection methods where contact between the researcher and participant does not allow for clarification. This issue has stimulated the development of interactive methods which allow questioning and clarification such as Informal Confidential Voting Interview (ICVI) as well as Audio Computer-assisted Self-interviewing (ACASI) where participants may ask question or are verbally asked questions.

2.4.3. Participant variables

Issues such as alcohol, drug use and sexual activity become highly private activities when participants are asked to reveal their own behavior. Participants may feel boastful, threatened, embarrassed, stigmatized and/or distressed (Makiwane & Mokomane, 2010). Participants may respond to requests to report sensitive behavior by: a) refusing to answer, b) over-report; i.e. to affirm occurrence of the target behaviour/s but increase the intensity or number of times, c) underreport; .i.e. disconfirm the occurrence of the target behaviour/s. Or finally d) underreport; i.e. to affirm the occurrence of the target behaviour/s but decrease the intensity or number of times (Catania et al., 1990; Makiwane & Mokomane, 2010). Over- and under-reporting of behaviors is a form of self-presentation bias or Social Desirability Responding (SDR). While under-reporting of sensitive risk behaviors are more likely in drug and sexual studies, alcohol use may be over-reported as participants are more prone to inaccurately recall this behavior (Catania et al., 1990). Investigation into sensitive behaviors such as sexual activities males are most likely to over-report or boast sexual behaviors, while females constantly under-report sexual behaviors (Langhaug, Sherr & Cowan, 2010).

Social Desirability Responding is the tendency of participants' to be less than truthful with information that may depict them negatively (Hays, Hayashi & Stewart, 1989; La Brie et al., 2000). Individuals vary in their tendency to give Socially Desirable Responses (SDR) such as underreporting of socially deviant behaviour while over-reporting socially acceptable

desirable behaviours (Hays, Hayashi & Stewart, 1989). Thus, the validity of self-reports methods becomes questionable as the amount of SDR increases relative to sensitivity of the research issue. In studies surrounding sensitive and risk behaviour, it is common to relate SDR to gender, race and situational-specific social norms that affect the way in which participants respond (Catania et al., 1990). For instance, male participants are more likely to over-report sensitive issues while female participants underreport as a result of social norms in development (Catania et al., 1990).

2.4.3.1. Social Desirability Responding

In research surrounding issues of sensitivity, the risk of SDR in collecting reliable data is widely acknowledged, resulting in the creation of scales aimed to detect, minimise and correct SDR. These scales are used in conjunction to self-report data collection methods to assess the impact of SDR as a confounding variable (Hays et al., 1989). Scales developed by Crowne and Marlowe (1960, in Hays et al., 1989) as well as Hays, Hayashi and Stewart (Hays et al., 1989) are commonly used in research to evaluate participants' tendency to give socially-desirable responses. The Marlowe-Crowne scale of social desirability (1960, in Hays et al., 1989) was developed to evaluate participants varying tendency to SDR. The scale assesses the degree to which participants constantly rate their personal behaviour in socially approved ways, while denying partaking in socially deviant behaviour. The original scales by Crowne and Marlowe (1960, in Hays et al., 1989) included long form 128 item as well as a shorter form 33 item Likert scales which require participants to answer questions about personal social interactions. The most commonly used scale in assessing SDR, the Marlowe-Crowne 33-item scale is however, subject to varied levels of criticism. Due to the length of administration time and burden on participants to complete the Marlowe-Crowne 33-item scale, shortened versions of the scale continue to be developed.

Hays, Hayashi and Stewart (1989) aimed to create a short form scale as a practical alternative to the existing lengthy scale. Items were drawn from the Crowne and Marlowe (1960) 33 item scale with the highest item-to-total correlations (Hays et al., 1989). Participants are asked to rate the 5 items on a 5-point Likert scale ranging from 1 (definitely true) to 5 (definitely false). Thus in a measure of SDR, only the extreme responses are indicative of SDR as socially deviant behaviour would be rated as high (definitely false/mostly false)

while socially desirable behaviour would be rated as low (definitely true/mostly true) by participants (Hays et al., 1989). The resulting Hays' 5 item scale (1989) had the advantage of having a less than a minute administration as well as requiring minimal training by researchers.

The problems with self-report accuracy are multifaceted. With the increasing number of HIV and AIDS infection each year, it becomes clear that there is a great need for accurate prevalence data as well as improved preventive strategies to guide intervention design and for monitoring of intervention programs (Langhaug et al., 2010). Accurate prevalence data is fundamental in creating reference points for behaviour, continued tracking of disease and death as well as critical in identifying risk populations. All of which is aimed at the improvement and increased effectiveness of intervention programs. The assessment of all sensitive and risk behaviour then becomes a critical component of research with a focus on associations in behaviour and action that results in increased risk of infection. Existing literature does in fact attempt to address these issues by highlighting problems such as measurement error and bias as the primary sources of error (Catania, Chitwood, Coates, & Gibson, 1990). Numerous sources of bias include question ordering, participants' failure to understand the question as the researcher intended, lack of knowledge, difficulties with recall, acquiescence as well Social Desirability Responding (SDR).

The afore-mentioned issues will be addressed within this study through a) a norming study will attempt to scale sensitive or private behaviour. The results of which will be used to provide terminology and formatting for the rest of the study. b) The experimental comparison of methods will investigate the rates of disclosure (as an analogue of the validity and reliability) of each data collection method, c) investigate participants' experiences of the different methods of survey and finally d) make a comparison between group rates of social desirability responding.

2.5. Data collection techniques

All researchers are aware that the only way to access private and unobservable behaviours is by asking participants, or through self-report. Self-report methods have therefore become the most commonly used measure in the Social Sciences. A self-report method is any method which involves the participant reporting factual answers on their own behaviour. It is therefore essential that data be valid and reliable. There are evident differences in validity and reliability results of different methods of data collection. This study will therefore give attention to how different data collection methods differ in their ability to accurately capture data relating to sexual risk behaviours.

Langhaug, Sherr and Cowan (2010) prompted comparisons of more than two data collection methods in highlighting the efficacy of methods in collecting research surrounding sensitive behaviors. Consequently, this research study reviews a range of different data collection methods such as traditional Self-Report Questionnaire (SRQ) and Face-To-Face Interview (FTFI), indirect estimation method Random Response Technique (RRT) and Unmatched Count Technique (UCT) and finally Informal Confidential Voting Interview (ICVI) and Audio Computer Assisted Self-Interview (ACASI)

2.5.1. Self-report questionnaires (SRQ)

Self-report questionnaires are a general term for all methods in which participants consent to provide information about their lives, beliefs, attitudes, feelings and opinions. Traditionally SRQ are pencil and paper surveys which comprise sets of several items in a variety of formats including Likert-type scales, true and false items or checklists and the like (Terre Blanche et al., 2006). Data is derived from SRQs by asking direct questions relating to items of interest and has been the most widely used and valid form of self-report method (Korb, 2011). As well as being the cheapest data collection method, the greatest advantage of self-report questionnaires is that it allows the participants to express their own views directly where information about the topic is not directly observable by the researcher (Foxcroft & Roodt, 2011; Korb, 2011). Self-report questionnaires have the additional advantage of ease of implementation as the researcher can distribute surveys to a large sample of participants.

Traditional self-report questionnaires have been critiqued due to the various potential validity and reliability problems associated with its use (Terre Blanche et al., 2006). As discussed

earlier, participants vary in the degree to which they may understand instructions, wording and phrasing of questions. While this may be less of a concern if the researcher is able to clarify, participants may be reluctant to ask questions in self-report questionnaire formats, answering what they think is correct rather than the question. This is particularly relevant to rating Likert scales as participants' perceptions of extreme yes/no responses are interpreted dependent on their own experience.

Additionally, Self-Report Questionnaires are highly susceptible to participant bias as participants correct for their behaviour rather than reporting the factual occurrences and durations of behaviour. This impacts the validity and reliability of SRQ data as a lack of belief surrounding the anonymity of Self-Report Questionnaires as well as the proximity of researcher in the test environment directly affect the degree of honesty of participants (Foxcroft & Roodt, 2011). Participants' bias can result in participants answering what they believe to be the right answer or Socially Desirable Responses. This perceived lack of privacy and a fear of stigmatization results in greater inaccuracy and unreliability (Foxcroft & Roodt, 2011).

2.5.2. Face to Face Interview (FTFI)

The Face to Face Interview is conducted on a one to one basis between the researcher and participant in an environmentally controlled room. FTFI allows for personal communication which can be highly structure or informal, allowing for extensive exportation when collecting detailed information. Face to Face Interview affords the participants and researcher greater opportunity to clarify questions while ensuring the participant feels at ease during the interview. The researcher is able to interpret non-verbal gestures given by participants such as frowns and nervous taping which can be later associated with the collected data. Further, as questions are verbalised during the FTFI, participants are not required to read which may prove advantageous with an illiterate sample or participant (Tourangeau, 2004). The researcher can further ensure that the interview environment is free of distractors while providing the participant with privacy to increase the perceived anonymity (Gregson, 2004).

The Face to Face Interview does however, have several disadvantages for both the researcher and participants. Attaining the correct interview environment, expert training and other resources used in FTFI may be viewed as a drawback of this data collection method in terms

of cost. Additionally, face to face interviews require greater time and in turn may cost more in implementation in terms of time and labour. The FTFI does continue to yield social desirability bias as participants are required to directly respond to all questions to the researcher (Tourangeau, 2004), resulting in a perceived lack of anonymity. Face to Face Interview therefore requires a balance of building of rapport between the researcher and participant during the FTFI to negate the stigma of revealing sensitive information by the participant (Langhaug et al., 2010; Tourangeau, 2004).

2.5.3. The Informal Confidential Voting Interview (ICVI)

In an attempt to negate many of the challenge from the use of Face to Face Interview, the Informal Confidential Voting Interview was designed by Gregson, Mushati, White, Mlilo, Mundandi, and Nyamukapa (2004), which combines the conventional FTFI and confidential voting methods techniques. Creators of the Informal Confidential Voting Interview aimed to produce data with greater reliability and validity while reducing social desirability responding (Gregson et al., 2004). While there are currently few studies which make use of ICVI, literature by Gregson et al., (2004) indicates that unlike the traditional FTFI, use of the ICVI tends to yield higher and more accurate base rate estimates especially in research surrounding sensitive or unconventional information.

The ICVI is a two-step process that makes use of a voting box apparatus to maximise privacy for participants. In the first step, the participant is informed of the full procedure, allowed to ask any questions followed by a general discussion of the topic. The purpose of this introduction is to build rapport between the researcher and participants as the interview moves from non-sensitive questions to relatively more sensitive topics (Gregson et al., 2004). Continued assurance by the researcher to participants of the non-judgemental and private nature of the ICVI has been shown to positively increase participants' truthfulness.

In the second step of the ICVI, the researcher focuses on the shift from non-sensitive items to sensitive and private items which are read out loud (Gregson et al., 2004). Participants are required to answer the items on a slip of paper and place their answers in a locked box with slots. The locked box also serves as a screen between the researcher and participant as the researcher is not allowed to see the answers until after the interview. This serves to increase the participant anonymity (Gregson et al., 2004).

These improvements to traditional survey methods aimed to increased truthful responses by participants by providing participants with evasive answer options while still providing means to build rapport with the researcher. Alternative data collection techniques such as Randomised Response Technique and Unmatched Count Techniques utilise differing evasive answer options with the similar aim of preserving the privacy of the participants,

2.5.4. Randomised Response Technique (RRT)

The Randomised Response Technique (RRT) was developed by S. L. Warner (1965) as an indirect survey method aiming to increase accuracy of responses as participants answer items without revealing personal information to the researcher. RRT has positively been used in social and behavioural research on sensitive behaviours as it is designed to correct for social desirable responding (SDR) (Thornton & Gupta, 2004). RRT pairs inoffensive items with sensitive items of interest. A randomizing device then calculates the proportion of participants that answered the sensitive item. The corrected group response is then estimated by adjusting for the known probability in the randomised device (Thornton & Gupta, 2004; Warner, 1965).

This method is advantageous as it provides more valid response rates than traditional direct questioning. RRT also provides greater accuracy of estimates and frequency measurements (Thornton & Gupta, 2004). RRT has previously been problematic in several regards with high non-response, false 'no' responses as well as inadequate protection perceived by participants (Coutts & Jann, 2008). This introduces additional random error due to the corrected responses which may prove to be less efficient than the responses gained in direct questioning (Thornton & Gupta, 2004; Coutts & Jann, 2011).

2.5.5. Unmatched Count Technique – Type I and Type II (UCT)

The Unmatched Count Technique (UCT) was created in response to the need for alternative indirect survey methods. Developed from Miller's item count method (1984, in Chaudhuri & Christofides, 2007), the UCT required participants to report the number of behaviours from a list that he or she had engaged in rather than identifying which items. Miller (1984, in Chaudhuri & Christofides, 2007) aimed to provide participants with greater perceived privacy

the result of which results in participants truthfully indicate the number of items. The UCT provides ease of administration with clearer instruction as well as greater perceived anonymity by participants which aid in increased disclosure rates (Chaudhuri & Christofides, 2007). Specifically Dalton et al. (1994), Droitcour, Caspar, Hubbard, Parsley, Visscher, & Ezzati (1991) and Chaudhuri and Christofides (2007) report that the UCT demonstrated efficiency in collecting sensitive information with higher rates of disclosure in research.

Unmatched Count Technique utilises two randomly assigned groups of participants (Dalton et al., 1994). Both groups are required to identify from a list of randomly selected statements, how many of the statements apply to them, not which of the statements apply (Dalton et al., 1994). Traditionally, UCT Type I requires that the first group of participants receive a list of non-sensitive and non-related statements; for instances, a list of 5 non-sensitive and non-related statements will be given to the first group with each participant indicating how many of the 5 statements is true for them. While the second group of participants will receive a list of 5 non-sensitive and non-related statements with an additional sensitive item (Walsh & Braithwaite, 2008). Similarly, participants of the second group will indicate how many of the six statements are true for them. The means of each sample group are calculated and compared to interpret what portion of the second sample responded positively to the sensitive item. The calculation is as follows:

Estimate (p) = mean A – mean B

Estimate (p) is the proportion of the sample disposed to the sensitive behaviour.

Mean A = the mean number of statements designated by the subjects exposed to sensitive statement.

Mean B = the mean number of statements designated by the subjects not exposed to sensitive statement.

(Dalton, 1994)

UCT has previously been shown to be advantageous for sensitive behaviour surveys as participants are able to be honest as they are not required to identify whether the sensitive items apply to them or not (Walsh & Braithwaite, 2008). Due to increased anonymity,

participants give accurate and honest reports of their behaviour and thus reducing misreporting (Walsh &Braithwaite, 2008). UCT further provides participants with clear and simple instructions which offers greater ease of administration (Dalton et al., 1994; Walsh &Braithwaite, 2008).

While providing for privacy, the UCT cannot generate individual level data (Walsh &Braithwaite, 2008; Dalton et al. 1994) but rather can only generate aggregate base rates or proportions of the sample that is likely to have engaged in the sensitive behaviour. Additionally, while UCT Type I does provide participants with a greater sense of perceived anonymity, understanding of the technique and instruction remains an problem. In particular Chaudhuri and Christofides (2007) and Walsh and Braithwaite (2008), indicate there is the risk of misunderstanding instructions by participants. This may then result in negative proportions or proportions indicating above 100% of participants partaking in the sensitive behaviour. As highlighted in past literature by Chaudhuri and Christofides (2007), format of the UCT type I may result in an emphasis of the sensitive items. As a result, participants may be responding by stressing the number of items which they hadn't done or 'no' instead of highlighting answers which they had or 'yes' answers. Thus, questionable proportion estimates may be argued to be the result of measurement error rather than reliably reflecting participants' indication of sensitive items.

With the aim of addressing this issue, Chaudhuri and Christofides (2007)suggested rephrasing of non-sensitive items to further blend with the sensitive items to address problems of negative proportions. UCT type II, developed as part of the larger Phd study, differs in that following Chaudhuri and Christofides (2007) suggestion the sensitive item does not bluntly stand out from all other items but rather appear somewhat related to all items. The first group of participants will receive a list set of non-sensitive but related items that do not include an additional sensitive item. Additionally, the second sample group will receive a list set of non-sensitive but related items with an additional sensitive item. Chaudhuri and Christofides (2007) aimed for the non-sensitive items to be related as to not create suspicions of the item. This serves to create a meaningful purpose for all non-sensitive but related items as participants are eased into the sensitive item.

2.5.6. Audio Computer-assisted Self-interviewing (ACASI)

The development of computer-assisted surveys and online survey methods are increasing with the use and advancement of computers. Computer-Assisted Self-Interviews (CASI) was first used with the advantages of 1) responses are automatically entered resulting in less data entry error, 2) instructions can be given and repeated on screen which yields less confusion for participants and finally 3) with little to no hard copy data, greater protection is afforded to participants and decreased use of resources (Richter & Johnson, 2001). Richter and Johnson (2001) reported that the use of CASI methods has the advantage of increased disclosure rates when compared to traditional methods.

Audio Computer-assisted Self-interviewing (ACASI), developed from CASI, as a new interview-based technique in response to the need to limit the measurement error resulting from possible bias (Perlis, Des Jarlais, Friedman, Arasteh, & Turner, 2004). The method makes use of computer technology and presents the participant with questions on the computer monitor while the participant simultaneously listens to the pre-recorded questions via headphones (Perlis et al., 2004). Each participant is then required to answer by pressing the assigned computer key as illustrated on the computer monitor. ACASI has been shown to have the potential for reducing misreporting of sensitive behaviours (Perlis et al., 2004; van der Elst et al., 2009). This is primarily done by eliminating the contact between the participant and researcher which increases anonymity and confidentiality. As a result, every participant's answers are entirely private as they are not revealed to the researcher (Perlis et al., 2004). This has been shown to lead to higher accurate and honest reporting of sensitive behaviours (van der Elst et al., 2009). Furthermore, unlike paper SRQ, ACASI does not require the participant to be literate and the computer monitor answers can be coloured coded (Perlis et al., 2004). An additional advantage of ACASI is the standardising of data collection (Langhaug et al., 2010; van der Elst et al., 2009).

The primary disadvantage of ACASI is that it does require prerecording of the questions as well as a brief training session for the participants to be instructed as to how to use the computer, including how to change answers and how to return to previous questions (Perlis et al., 2004).The burden of special software and cost is also placed on the researcher (Perlis et al., 2004; van der Elst et al., 2009). As a result, it is both the most expensive as well as most

advanced method at this point in time. While van der Elst et al. (2009) has highlighted that ACASI does require more time from the participant, Perlis et al. (2004) suggest that this assists in leading to greater reporting of sensitive behaviours as participants are not pressured by time constraints and researcher bias to complete.

2.6. Consideration of gaps in literature

Exploratory studies have increased over the past two decades with a particular focus on behaviours that increase contraction of STD, HIV and AIDS. Prevalence data collected from these studies is then used to design appropriate behavioural interventions as well as to measure and interpret the effectiveness of these programs. With an acknowledged gap in validity and reliability of the self-reported methods, great attention is given to improving data collection methods. Given the growing number of data collection methods, comparisons between data collection methods will continue over time. Although there are various discussions regarding findings on each of the survey methods, there are currently no comparisons of UCT Type I to ACASI. This study will therefore aim to be an exploratory investigation of differences between the UCT type I and ACASI.

2.6.1. Norming study

Most research has simply taken a common sense approach to defining what a sensitive issue is; this research study will take steps to understand what sensitive behaviour as defined by the sample is. The aim is to isolate, from the broad and differing understanding of open-ended definitions, a list of sensitive behaviours. Suggestions by authors promote that the definition of sensitivity develop within the research process as a comprehensive list has yet to be complied. Thus this study will create a list of sensitive behaviours from items and topics emphasized in past literature such as Alledahn (2011), LaBrie et al. (2000) and Gregson (2004) and will verify and scale their sensitivity with a sample from the population from which the experimental study sample will be drawn.

2.6.2. Self-report questionnaires (SRQ) and Audio Computer-assisted Self-interviewing (ACASI)

In a comparison of standard SRQ and ACASI, ACASI has been rated the preferable method of data collection in research settings, especially when the survey includes sensitive questions (Reichmann, Losina, Seage, Arbelaez, Safren, Katz, Hetland, & Walensky, 2010). Despite efforts to encourage the participants to answer questions honestly, participants showed differences on reported sexual behaviour (Mensch et al., 2003). This may be a consequence of participants greater perceived sense of privacy with the data collection method ACASI as it requires participants to input their answers directly into the computer interface which serves as motivation for responding truthfully (Beauclair et al., 2013; Mensch et al., 2003). Similarly participants need not be literate and competent to fill out the questionnaire as participants have the option of audio instructions (Mensch et al., 2003). As a result of the above advantages, the rates of item nonresponse were lower with ACASI—11% versus 13% for the standard SRQ —reflecting, a more positive reaction to the computer (Mensch et al., 2003). The most advanced ACASI touch screen computers, when compared to any other methods of inquiry, had the greatest completion rate, probably owing in large part to participants' perceived ease of use and privacy (Beauclair,Meng, Deprez, Temmerman, Welte, Hens, & Delva,2013; Mensch et al., 2003).

Differences were also found between males and females on different kinds/types of sexual risk behaviours. Female participants have been shown to be significantly less likely to report sexual behaviour in the SRQ, while positively reporting behaviour using ACASI (Beauclair et al., 2013; Mensch et al., 2003). Whereas, male participants reflected a preference for SRQ when reporting sexual behaviour (Beauclair et al., 2013; Mensch et al., 2003). While ACASI has been shown to provide better accuracy in the report of sensitive behaviour, the differences between males and females is unaccounted for (Mensch et al., 2003).

On the other hand, participants who were from disadvantaged backgrounds or unemployed found the ACASI difficult to use due to a lack of computer exposure (Makiwane & Mokomane, 2010). Results by Langhaug et al., (2011) however, point out that that levels of literacy affects the efficacy of the ACASI rather than exposure and use of computers. Previous studies which highlighted these limitations noted that participants' recall of information was greatly affected due to the additional strain of navigating ACASI (Beauclair et al., 2013; Makiwane et al., 2010). In South Africa, this may be problematic in rural and

low education settings; however, with a sample of college students, it can be assumed that students will have some previous computer skills (Makiwane & Mokomane, 2010). By being aware of the difficulty of ACASI, researchers can provide additional support and training prior to the survey thus the accuracy of data may be improved (Beauclair et al., 2013; Makiwane& Mokomane, 2010).

2.6.3. Unmatched Count Technique (UCT) and Self-report questionnaires (SRQ)

Various studies reveal the effectiveness of the UCT at providing higher estimates of sensitive behaviours' particularly in sensitive sexual behaviours (Dalton et al., 1994). In a comparison between UCT and SRQ, UCT methods have been found to be more effective in eliciting truthful responses to sensitive questions (Walsh & Braithwaite, 2008). While participants are encourage to answer truthfully in all self-report methods, assuring anonymity during SRQ data collection has been shown to be met be scepticism by participants. As a result, the UCT yielded much higher estimates then traditional paper and pen SRQ by a ratio of nearly 1:3 (Dalton et al., 1994).

In an overview of differences, the UCT method has a greater disclosure rates than SRQ when reporting on issues such as sexual interaction resulting from alcohol and/or drug intoxication (Walsh& Braithwaite, 2008). Great attention has been given to the difference in gender, with data collection method Unmatched Count Technique consistently producing higher affirmative responses by males then traditional Self-Report Questionnaires surrounding issues such as sexual coercion or rape in addition to sexual interaction resulting from alcohol and/or drug intoxication (Shaik, 2012; Walsh & Braithwaite, 2008). Whereas, females demonstrated no significant difference in response rates between SRQ and UCT surrounding sensitive issues of alcohol consumption, drug and other related sexual behaviors, male participants consistently demonstrate a preference for SRQ (Reichmann et al., 2010; Walsh& Braithwaite, 2008). However, questions surrounding subjects such as personal sexual action and non-condom use while intoxicated or current STD/AIDS status, males and females are more likely to positively respond when UCT method is used (Shaik, 2012).

2.6.4. Social Desirability Scale

SDR most commonly occurs when a participants intentionally misrepresents the truth to be perceived positively by the interviewer and/or the researcher (Shaik, 2012). Although it has been well established that traditional SRQ tend to yield fewer social desirable responses than FTFI, less is known about various other methods of collection. In a comparison of UCT and SRQ, inconsistency can be found in literature as Walsh and Braithwaite (2008) suggests significantly lower SDR aggregate scores by the UCT, however, local studies by Shaik (2012) and Alledahn (2011) indicate no difference in SDR aggregate scores between UCT and SRQ. More importantly, there have been mixed results on the effectiveness of computerised self-administered questionnaires over traditional paper methods. This study will aim to investigate differences in SDR among three data collection methods.

CHAPTER 3 Aim and rationale

3.1. Rationale

This study is a component of a larger suite of related studies. The overarching study is a PhD study that is investigating the effect of a range of data collection methods on rates of disclosure of sensitive behaviours. The larger study has several components including norming sensitive data, comparing survey methods, measuring participant experiences of the different methods, as well as an experimental investigation of social desirability responding. The larger study will compare different survey methods such as the Face-To-Face Interview (FTFI), the Unmatched Count Technique (UCT Type I and Type II), the Self-Report Questionnaire (SRQ), the Informal Confidential Voting Interview (ICVI) and the Audio Computer Assisted Self-Interview (ACASI).

This study investigated the effect of three different survey methods on disclosure rates of sensitive behaviour, taken as an analogue of validity. In creating reliable and valid data, appropriate norms need be established regarding what is perceived as sensitive or stigmatised behaviour by the population of interest. This is important as researchers often find that participants do not agree on what sensitive behaviours are. The normative study was therefore aimed at creating a comprehensive list of sensitive behaviour as rated by the sample of interest, i.e. university students. The differences in sensitivity were noted for gender and race, reported below.These items were used in the experimental comparison of methodsof this study. The experimental comparison of methodsaim of this study was then to assess the effects of three different survey modes on the response rates obtained from the participants. This study made a focused comparison of the Self-Report Questionnaire, the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique, as a means of obtaining valid and reliable responses to questions on sensitive behaviors. Hay's 5 item Social Desirability Scale was attached to every data collection method in an attempt to measure the degree to which participants vary in their tendency to give socially desirable responses by method. Finally, a quantitative investigation into each participant's experiences of the different methods of survey completed this study.

This study aimed to:

1. Understand what behaviours are considered sensitive or private by university students in respect of disclosure in the research context. This will be done using a norming study that aims to scale the levels of sensitivity of a set of behavioural statements derived from the risk literature and from previous studies in this field.

2. Investigate the effects of each of three data collection methods (UCT – Type I, ACASI and SRQ) on rates of disclosure of sensitive items. By determining which self-report method is most valid and reliable, contributes to knowledge of how to enable increased disclosure and reduce socially desirable responses in future studies.

3. Investigate participants' experiences of the different methods of survey

4. Compare group rates of social desirability across the three methods

The results of this study will be written up as a dissertation for a Masters in Psychology. This study is part of a larger suite of studies conducted by Vernon Solomon. All research conducted under this supervisor has been collaboratively undertaken. Contributors include:

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3.2. Research Questions

1) What behaviours are considered sensitive and non-sensitive by the sample population? Racial and gender difference?

2) Which of the different survey methods, the SRQ, UCT and ACASI yield greater rates of disclosure on sensitive issues?

3) Which of the different survey method, the SRQ, UCT and ACASI yield the lowest group rates of social desirability bias?

4) What survey method is most highly rated by participants in terms of ease of use, anonymity and protection of confidentiality?

5) What is the prevalence of sensitive behaviors, condom use as well as relationships such as transactional and multiple and concurrent partners, among the sampled participants?

3.3. Hypotheses

The hypotheses regarding the SRQ, ACASI and UCT are as follows:

A) Null hypothesis: There is no significant difference in base rate estimates of sensitive behaviour disclosure between Self-Report Questionnaire and the Audio Computer-assisted Self-interviewing.

Alternate hypotheses: Significantly higher base rate levels of sensitive behaviour disclosure are yielded by the ACASI in comparison to the SRQ for each of the sensitive items.

B) Null hypothesis: There is no significant difference in base rate estimates of sensitive behaviour disclosure between the Self-Report Questionnaire and the Unmatched Count Technique

Alternate hypotheses: There is a significant difference in base rate estimates of sensitive behaviour disclosure between the Self-Report Questionnaire and the Unmatched Count Technique

C) Null hypothesis: There is no significant difference in base rate estimates of sensitive behaviour disclosure between the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique.

Alternate hypotheses: There is a significant difference in base rate estimates of sensitive behaviour disclosure between the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique.

D) Null hypothesis: There is no significant difference in the participants' experiences between the Self-Report Questionnaire, the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique.

Alternate hypothesis: There is a significant difference in the participants' experiences between the Self-Report Questionnaire, the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique.

E) Null hypothesis: There is no significant difference in group rates of social desirability between the Self-Report Questionnaire, the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique.

Alternate hypothesis: There is a significant difference in the group rates of social desirability between the Self-Report Questionnaire, the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique.

CHAPTER 4 Methodology

4.1. Research Design

This study takes on a positivist paradigm, which contributes to an experimental hypothesis-testing methodology (Terre Blanche et al., 2006). This two phase study comprised the following: A cross-sectional survey design for the norming study to ascertain what behaviours are considered sensitive and non-sensitive by the sample population. The second phase is an experimental comparative cross-sectional survey design to compare which of the following self-report questionnaire methods yield greater rates of disclosure on sensitive issues: Unmatched Count Technique Type I (UCT), Audio Computer-assisted Self-interviewing (ACASI) and a Self-Report Questionnaire (SRQ). Triangulating sexual behaviors between data collection methods has been shown to be beneficial in improving our understanding of the differences in self-reported sexual behaviors (Langhaug et al., 2011). Each self-report questionnaire method was concluded with a Social Desirability Scale added which detected SDR associated to each method in an attempt to further understand which method has the least SDR by participants. Finally, a quantitative experience of participation was attached to each data collection method which scored each method in terms of ease of use, anonymity and protection of confidentiality.

4.2. Sample

4.2.1. <u>Norming Study</u>

The norming study aimed to obtain a sample of the students currently registered at the University of KwaZulu-Natal, Pietermaritzburg 2013.

4.2.2. <u>Experimental comparison of methods</u>

According to La Brie et al. (2000) and Dalton et al. (1994), comparative studies should attempt to recruit 40-50 per UCT form. While in comparative studies, the SRQ required a sample of 102 or more (LaBrie & Earleywine, 2000). This was also applied to the ACASI. Therefore, across the three self-report methods a minimum of 404 participants was deemed sufficient (Dalton et al., 1994).

4.3. Recruitment/Sampling

4.3.1. Norming Study

A convenience sampling strategy was used for the norming study to readily access the students population. Recruitment occurred in various locations throughout the campus including the on-site libraries, cafeteria, campus lawns and lan areas. All participants were approached by a researcher on an individual one-on-one basis. This was designed with the aim of ensuring that participants were comfortable in the setting as well as allowing for the participant to ask for further clarification without additional external interference. Participants were approached to fill in their questionnaire on the spot and hand back once completed. Male and female students were approached to participate and only individuals 18 and older were considered for inclusion in the sample. All racial groups were included in the sample to ensure demographic representativeness.

4.3.2. Experimental comparison of methods

The experimental comparison of methodsoriginally used a non-probability convenience sampling method consisting of the student population at the University of KwaZulu-Natal, Pietermaritzburg campus. Two primary recruitment methods were be used throughout the experimental comparison of methods.

Verbal recruitment took place at various points across campus including on campus cafeterias and campus lawns. Written announcement of this study were advertised in and around campus. Written announcements included details about the study and incentive, available time slots for each method. Written announcements included a group email to contact if interested in partaking in the study at a later time.

All potential participants were given a brief introduction to clarify the aim of the study in addition to any additional information needed by participants. Furthermore, as a token of appreciation for their participation, each participant was further informed that they would receive a monetary incentive.These methods were used to promote recruitment of differing

participants in addition to being beneficial to both participants and researchers as it allows for a beneficial agreement on time slots. As the study progressed, sampling procedures changed as students became informed about the study resulting in snowball sampling.

4.4. Ethical considerations

This research study obtained ethical clearance from University of KwaZulu-Natal, Social Science Research Ethics Committee, ref no. HSS-0837-013CA. Ethical considerations are crucial in conducting on research which involves human participation. This is particularly relevant in research surrounding sensitive behaviours. It was therefore vital to comply with the American Psychological Association (APA) ethical principles of psychologists and code conduct (Appendix A).

4.4.1. Informed consent

4.4.1.1. Norming study

Procedures followed for the norming study ensured all participants were given an information sheet and informed consent form prior to partaking in accordance to Ethical Guidelines (Appendix C). The standard components of consent were presented, this included: a) participants were given all information necessary before the commencement of the study outlining the background, rational and aim of the study, b) participants were verbally and in writing informed about the voluntary nature of the study, freedom to decline and the right to withdraw at any time, and finally c) participants were asked to read through all necessary information with full understanding before consenting. In order to ensure maximum protection of participants, the norming study did not require a completed consent form from each participant. All participants were informed that completion of the norming questionnaire would be accepted as voluntary consent, while incomplete questionnaires would be discarded.

4.4.1.2. Experimental comparison of methods

The information and consent form consisted of the standard components of consent (Appendix C). All participants were given an information sheet and informed consent form prior to partaking in accordance to Ethical Guidelines. Similar to the information sheet

provided in the norming study, the information sheet explained participants were given all information necessary before the commencement of the study outlining the a) background, rational and aim of the study, b) participants were verbally and in writing informed about the voluntary nature of the study, freedom to decline and the right to withdraw at any time, and finally c) participants were asked to read through all necessary information with full understanding before consenting. Participants were further informed of details pertaining to incentives given as well as the names and contact details of the researchers and the overseeing research supervisors. These details were provided to all participants as a precaution against feelings of personal discomfort or distress as a result of participation. Participants were informed to contact any of the provided researchers for referral to counselling service provided by the School's Child and Family Centre.

After this process, all participants were required to sign the consent form to indicate their willingness to participate. Assurance by the researchers was given to all participants that consent forms, once signed, were kept separate from the self-report responses to guarantee anonymity.

4.4.2. Justice

Justice is the requirement of participants to be treated with fairness and equity at all stages of the research. This applied to the fair selection of participants and the moral treatment of participants within the study. This research study did not use any form of deception in participation selection and during testing. Participants were fully informed of all relevant details needed.

4.4.3. Beneficence

While the subject of this study may possibly cause distress for participants, every stage of the study aimed to ensure to maximise all benefits while minimising risk in research. Participants were informed that no direct benefit was awarded for partaking in the norming study. Every participant was assured that as no personal details would be collected at this stage of the study, ensuring anonymity as no questionnaire could be used to single out participants.

As part of the experimental comparison of methods, there was recognition for the burden placed on participants however there were no direct benefits for participation. Participants were asked to come to the data collection site, give up a portion of their time as well as answer questions surrounding sensitive and risk topics. As a result, participants each received a R20 incentive for participation in the study. This cost was be carried by the supervisor, V. Solomon, as part of a larger project.

4.4.3. Non-maleficence

This principle ensures that no harm befalls participants as a result or consequence of the research. All stages of this study therefore aimed to avoid and minimise harms and treat participants with respect at all times. It was, however, noted that given the research topic of this study, it was possible for participants to feel upset, embarrassed or distressed. To maximise non-maleficence and minimise risk, participants were encouraged to contact the student counselling service from their respective Colleges or the Child and Family Centre. Participants were also continuously informed that all data and personal information will be kept confidential.

4.4.4. Autonomy

The primary focus of autonomy is the requirement of informed consent as well as the right to withdraw by all research participants. To ensure this, no participants was forced to join this study. Participants were verbally and in writing informed that they may withdrawal from the study at any point. As further protection, participants were asked to provide minimal personal demographic information such as age, gender, race and the year of study. All information collected will remain confidential and identification protected during and after the study.

Additionally participation in the experimental comparison of methods, the UCT survey method provides greater anonymity as participants indicating the number of items rather than which items apply to them (LaBrie et al., 2000). Finally upon completion of the assigned data collection method, participants were required to sign a receipt of incentive which could not be linked back to the completed data collection method. All participants' information as well as signed receipts stored separately from all the questionnaire and data recorded. Once the study has been completed, all hard copies will be shredded and electronic copies deleted after 5 years.

4.5. Data Collection

4.5.1. Apparatus and Materials

The norming study was a paper and pencil rating sheet (See Appendix D). The experimental comparisons of methods were computer based and delivered in the Psychology laboratory, UKZN via a computer interface: MediaLab ™ software. The UCT Type I, ACASI and SRQ were administered via MediaLab as well as the Hays et al. (1989) Social Desirability Scale and the quantitative participation experience of the study. The latter two took the form of Likert scales.

4.5.2. Procedure

Researcher variables were controlled for during the entire study as all researchers were female, across several racial groups. Literature by (Catania et al., 1990) documents several references which indicate that participants demonstrated increased honesty with female researchers. This however should be interpreted with caution as it is largely dependent on the type of research done. While this study does not attempt to measure the effect of researcher variables and differences in researcher effects on results, the similarity of researchers may aid in reducing researcher gender effects. At the very least, gender is controlled for in this study through gender consistency of all those involved in data collection. Past literature has highlighted the effect of gender on the interview process particularly surrounding sensitive issues. While these factors cannot be completely controlled, expert training has been shown to minimise measurement error (Catania et al., 1990). All researchers were aware of all the research questions, the way in which the questionnaires would be administered as well as possible set answers for questions that may be asked by participants. The aim was to ensure that all researchers were knowledgeable about the appropriate information which could be discussed with participants while ensuring that little to no indication of the researchers own preference was shown.

All other data collection methods were standardised to ensure optimal privacy and anonymity for participants. At all stages of this research project, participants were requested to provide the following basic demographic information: their age, gender, race and year of study. The four components of this study are as outlined below:

4.5.2.1.   Norming study

The norming study was used to ascertain what was considered sensitive or private by university students in the research context (Appendix B-D). A counter-balance design was implemented in order to minimise factors such as participant fatigue and response set tendencies given the length of the survey instrument. All items were randomly allocated into one of four groups and then systematically ordered per form, resulting in four forms used in the norming study. This paper SRQ consisted of 186 items, across 4 different forms (A, B, C and D). The scale asked participants to rate the sensitivity of all items by answering 'I regard the item as so sensitive that if true about me, I would not want anyone to know about it'. Participants scaled their responses on a four point Likert scale response: 1) True for me, 2) Partially true for me, 3) Partially NOT true for me and 4) Not true for me at all. Each participant was asked to rate a total of 186 items. It is important to note that participants were not asked to indicate if the items were true for them, but only that *if* they were, to indicate the extent to which they were regarded as sensitive or private, operationalised as specified above.

The norming study provided items which were then used in the experimental comparison of methods. The analysis of this process through a factor analysis will be explained below. A total of 71 items was drawn from the results of the norming study: 20 of the most sensitive items, 26 related non-sensitive and 25 non-related non-sensitive items were used in the implementation of the study (Appendix D). Related non-sensitive items were extracted for the purposes of the larger Phd study, UCT Type II.

For analysis purposes across the larger study, all items will be included across data collection methods, with the exception of UCT data collection methods. UCT Type I only requires sensitive items and non-related non-sensitive items while UCT Type II requires sensitive items as well as non-sensitive but related items. As a result all sensitive, related non-sensitive well as non-related non-sensitive and items were used in data collection methods: SRQ, ACASI, FTFI and ICVI. This research paper only analysed sensitive items related to unsafe sexual practices in the domains of HIV/AIDS, MCP and transactional sex partnerships listed:

1. I am HIV positive.
2. I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes).

3. I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).

4. I have had more than two sexual partners in the last three months.

5. I have had sex with a partner who was 10 or more years older than me at the time.

6. I have had sex with a teacher or lecturer.

7. I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics).

8. I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection.

9. I have refused to use a condom.

10. I regret having had sex.

4.5.2.2.   Experimental comparison of methods

This experimental comparison of methods further compared the following self-report data collection method: Unmatched Count Technique (UCT Type I), Audio Computer-assisted Self-interviewing (ACASI) and a Self-Report Questionnaire (SRQ). Thus to ensure validity, reliability and rigour, participants were randomly assigned to one of data collection methods with the assistance of an online randomiser by Urbaniak and Plous (1997). Randomisation was implemented across all data collection techniques, the ACASI, SRQ, FTFI, ICVI and the UCT Types I and II, across different methods as well as sensitivity domains. Furthermore to ensure reliability, the sample size and groups allocations followed previous studies which highlight the importance of the correct sample size in yielding reliable and valid statistical data (LaBrie, 2000).

Illustrated in the box below is an example of the random order allocation tool used in the study. Participants were randomised daily per session to the 16 allocated slots labelled by data collection methods. Sessions were labelled according to data collection method as following: ACASI (1-3), FTFI (4), ICVI (5), SRQ (6-8), UCT Type I (9-12), UCT Type II (13-16) as a result the participant that's 1st in line must do an ACASI, the person that is second in line was allocated to data collection method UCT Type II while the person that is last in the first line is allocated to a FTFI.

3, 16, 2, 5, 11, 13, 8, 9, 7, 10, 14, 15, 1, 6, 12, 4 /

5, 14, 9, 6, 15, 7, 2, 10, 3, 8, 11, 4, 1, 16, 12, 13 /

4, 15, 13, 10, 7, 11, 2, 16, 6, 12, 1, 5, 14, 8, 3, 9 /

15, 11, 16, 1, 2, 8, 12, 5, 13, 7, 14, 3, 10, 9, 6, 4 /

10, 6, 2, 3, 5, 13, 7, 15, 14, 9, 12, 16, 4, 8, 1, 11 /

10, 4, 7, 14, 13, 15, 1, 8, 16, 6, 2, 12, 9, 3, 11, 5 /

10, 13, 7, 3, 8, 1, 2, 14, 4, 6, 16, 9, 5, 12, 15, 11 /

8, 6, 7, 2, 16, 14, 5, 4, 1, 9, 13, 12, 15, 10, 3, 11

Self-report questionnaires (SRQ)

Self-report questionnaires required participants to indicate the basic demographic information, as with all other data collection methods. For the purposes of data analysis of the larger study, the SRQ contained a completed set of 71 items across all sensitivity domains, adapted from the before-mentioned norming study: 20 of the most sensitive responses, 26 related non-sensitive and 25 non- related non-sensitive items (Appendix D). Participants were asked to indicate to each question presented on screen, coded for analysis. Items marked as 'true' were coded as 1, while a 'false' responses was coded as 2.

Audio Computer-assisted Self-interviewing (ACASI)

As with all other data collection methods, Audio Computer-assisted Self-interviewing required participants to indicate the basic demographic information such as age, gender, race and year of study. This method presented participants with 71 items on the computer monitor while simultaneously requiring participant to listen to the pre-recorded questions via headphones (Appendix F). Each participant was then required to answer by pressing the assigned computer key as illustrated on the computer monitor. The ACASI and SRQ followed the same predetermined item order.

Unmatched Count Technique Type I (UCT Type I)

The format of the UCT involved four forms each containing a series of item sets including a mixture of either innocuous or sensitive items. Each Form consisted of 10 item sets with matched alternative item sets containing the sensitive item. In accordance withDalton et al.(1994),it is assumed that the difference between the means obtained on the two forms will provide the estimate base rate for the sensitive item.

The details of the formats are as example Form A, B, C and D:

Table 1 – Form A and Form B of the UCT Type I

Form A	*Form B*
Item set 1 I am HIV positive.	**Item set 1** Innocuous unrelated items
Item set 2 Innocuous unrelated items	**Item set 2** I have had more than two sexual partners in the last three months.
Item set 3 I have been forced to have sex.	**Item set 3** Innocuous unrelated items
Item set 4 Innocuous unrelated items	**Item set 4** I have had sex with a partner who was 10 or more years older than me at the time.
Item set 5 I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes).	**Item set 5** Innocuous unrelated items
Item set 6 I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).	**Item set 6** Innocuous unrelated items
Item set 7 Innocuous unrelated items	**Item set 7** I have had sex with a teacher or lecturer.
Item set 8 I have engaged in sexual intercourse whilst under the influence of alcohol that I later	**Item set 8** Innocuous unrelated item

regretted.	
Item set 9 Innocuous unrelated items	**Item set 9** I have had sex with someone when I was so drunk that I do not remember it.
Item set 10 I have forced someone to have sex with me.	**Item set 10** Innocuous unrelated items

Within forms C and D, similar to forms A and B, the position of the sensitive statement was predetermined with all other items set as non-sensitive and non-related items.

Table 2 – Form C and Form D of the UCT Type I

Form C	*Form D*
Item set 1 I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics).	**Item set 1** Innocuous unrelated items
Item set 2 Innocuous unrelated items	**Item set 2** I have raped someone together with one or more of my friends.
Item set 3 I have had sexual intercourse when so under the influence of alcohol that I was unable to consent.	**Item set 3** Innocuous unrelated items
Item set 4 Innocuous unrelated items	**Item set 4** I have refused to use a condom.
Item set 5 I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol.	**Item set 5** Innocuous unrelated items
Item set 6 I have had to slap, kick or bite someone to stop them from having sex with me.	**Item set 6** Innocuous unrelated items

Item set 7 Innocuous unrelated items	**Item set 7** I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.
Item set 8 I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection.	**Item set 8** Innocuous unrelated items
Item set 9 Innocuous unrelated items	**Item set 9** I regret having had sex.
Item set 10 I have raped someone.	**Item set 10** Innocuous unrelated items

Hays et al. (1989) Social-Desirability Scale was attached to each survey method to test for participants' Socially Desirable Responses (See Appendix F). The scale asked participants to rate their attitudes/behavior according to five responses 1) definitely true, 2) mostly true, 3) don't know, 4) mostly false, 5) definitely false. The Hays et al. (1989) social desirability scale requested participants to answer the following 5 questions:

1)   I am always polite, even to people who are unpleasant.
2)   There have been occasions when I took advantage of someone.
3)   I sometimes get even with people rather than forgive and forget.
4)   I sometimes feel resentful when I don't get my way.
5)   No matter who I'm talking to, I'm always a good listener.

Finally, each survey method included a quantitative investigation into participants' experiences of the different methods of survey (See Appendix F). The scale asked participants to rate their experience using the scale according to five responses 1) Strongly Agree, 2) Agree, 3) Undecided, 4) Disagree, 5) Strongly Disagree (See Appendix F). The following questions were asked:

1)   I am confident that my responses were anonymous
2)   I am confident that my responses will be kept confidential
3)   I was comfortable responding to the questions in this format

4)   I felt uncomfortable answering the questions in this way

5)   I trusted this process and felt my responses were protected

6)   There is no way that my responses could be linked to me as a person

7)   I felt uncomfortable disclosing sensitive information about myself

8)   I was comfortable enough to tell the truth

9)   I was able to tell the truth and not worry about it being identified with me

4.6.   Data Analysis

All responses regarding age, gender, race and year of study were coded similarly throughout the entire study. The results from the norming study were analyzed with SPSS statistical software 21.The scale asked participants to rate the sensitivity of all items by answering 'I regard the item as so sensitive that if true about me, I would not want anyone to know about it'. Participants scaled their responses on a four point Likert scale response: 1) True for me, 2) Partially true for me, 3) Partially NOT true for me and 4) Not true for me at all. A factor analysis was conducted (varimax rotation) for factors with eigen values greater than 1.0. This produced two clear factors that on investigation clearly served as sensitive and non-sensitive factors (Appendix G). This allowed for items to be grouped via the correlation matrix either as sensitive, non-sensitive items and non-sensitive but related items. Sensitive and non-sensitive items that correlate at 0.4 or higher with the two factors were included in the experimental comparison of methods whereas repeated items and all other additional items were dropped from the study.

Items that were grouped with low frequencies resulted in the eliminations of groups. Classification to domain groups was used, not only in the UCT Type II but for clarification in analysis and discussion. Items were then classified in specific domains as follows: HIV/AIDS, Intoxication, transactional sex, MCP and sexual violence. Classification into domain resulted in fewer domains than originally set as 4 independent raters established and refined these classifications (Appendix E). For analysis purposes across the larger study, all items were included across data collection methods, with the exception of UCT data collection methods. As a result all sensitive, related non-sensitive as well as non-related non-sensitive and items will be used in data collection methods: SRQ, ACASI, FTFI and ICVI.

UCT Type I only required sensitive items as well as non-related non-sensitive items while UCT Type II requires sensitive items and non-sensitive but related items. Additionally, it was possibly to draw conclusions surrounding issues of sensitivity across gendered as well as racial groupings.

The UCT Type I grouped Form A and Form B as well as Form C and Form D contained item sets with sensitive item alternating between item sets, refer to table 1 and table 2. In Form A and C sensitive items can be found in item sets 1, 3, 5, 6, 8 and 10 with the corresponding item sets in Form B and D consisting of a list on non-sensitive non-related items. The means for each form is then calculated with the assumption that the item set in which the sensitive items exist will be higher than item sets with only non-sensitive nonrelated items. Thus the equation, Estimate (p) = mean (A) – mean (B), was used to determine the base rate for each item set in accordance with Dalton et al. (1994). In Form B and D, sensitive items can be found in item sets 2, 4, 7 and 9 with the corresponding item sets in Form A and C consisting of a list on non-sensitive non-related items. The proportion calculated from the equation was then multiplied by the number of participants who responded to each of the forms (100) to determine the number of participants to positively answer true to the sensitive item.

UCT Type I, SRQ, ACASI and the social desirability scale were entered into Microsoft Excel and SPSS statistical software 21. True responses to the SRQ and ACASI items were coded as 1, while a 'false' responses was coded as 2. Winks statistical software was used for analysis across data collection methods which enabled binomials analysis indicating significant difference in proportionate data between independent samples otherwise known as pairwise tests of proportions(TextSoft, 2010).

Analysis for the Hays et al. social desirability scale was run using SPSS statistical software 21. Social desirability scale analysis required the scale to be split retrospectively into socially desirable response or non-socially desirable response items. This allowed for the third group, 'don't know' to be dropped from analysis, scored as 0. Additionally, high scoring responses were coded as 1 for every socially desirable response while non-socially desirable response items were scored as 0. These scores were then transformed to a 0-100 score distribution with the intention of generating percentages. An ANOVA in SPSS statistical software 21 was

used to test the significant difference between the data collection methods and Hays et al. social desirability scale.

Additionally, the participation experience of participants was attached to each of the data collection methods (Appendix F). The questionnaire was a Likert scale format that asked participants to rate their experience of participations on a 5 item scale according to 1) strongly agree, 2) agree, 3) don't know, 4) disagree and 5) strongly disagree. Each participant's answers were coded and entered into Microsoft Excel and SPSS statistical software 21. It was then possible to run an ANOVA analysis which tests for significant difference between the means of several groups. The ANOVA analysis was used to ensure that Type I error was controlled for which increases when more than 2 group means are compared.

CHAPTER 5 Results

5.1. Sample

Demographic data retrieved from Division of Management Information UKZN (personal correspondence, March 2013) indicated the University of KwaZulu-Natal campus; Pietermaritzburg had registered a total number of 9645 students for the year of 2013. Of the 9645, 5628 were female students (58%) with the additional student 4017 males (42%) (Figure 1). Further analysis indicates that 7422 were African (76.95%), 215 Coloured (2.22%), 1205 Indian (12.49%), 769 White (7.97%) and 34 "other" students (0.35%), respectively (Figure 2).

Figure 1- UKZN, Pietermaritzburg population - gender distribution
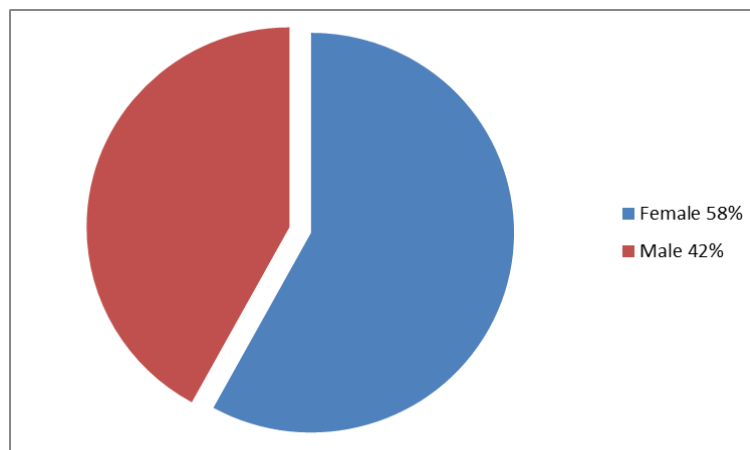
Figure 2- UKZN, Pietermaritzburg population - race distribution
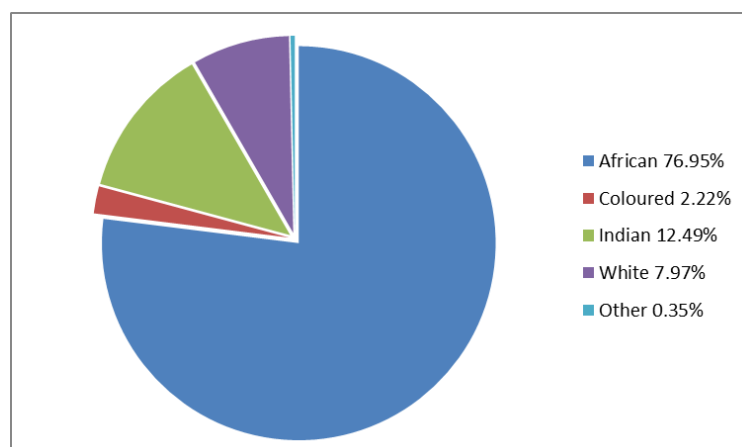
5.1.1 Norming Study

The Norming study attempted to gain a sample that matched the demographics of the student population as closely as possible. A total of 330 questionnaires were completed, of which 306 were analysable. The demographics of the sample are as follows: 189 females (61%), 108 males (35%) while 9 participants chose to remain unclassified (4%) (Figure 3). Additionally sample demographics included 193 (63.07%) African, 21 (6.86%) Coloured, 62 Indian (20.26%), 1 White (0.33%) and 21 'other' students (6.86%), respectively. A further 8 (2.61%) participants chose to remain unclassified (Figure 4).

The norming study while attempting to represent of the UKZN sample demonstrated an over- and under- representation of particular groups. The sample over represented females while under presenting males by 3%, respectively. This minor difference can be seen in Figure 1 and 3 which demonstrates the close degree to which the norming study represents the UKZN population.

In terms of racial representation, the norming study sample over represented several racial groups including Coloured (5%), Indian (8%) and 'other' (3%) while underreporting African and White racial groups by 24% and 7 %, respectively (Figure 4).

Response rate is calculated by dividing the total number of completed surveys by the total number of analyzed questionnaires. The norming study questionnaires were completed by a total of 316 participants of which 300 were used in further analysis. This calculated to a total response rate of 95%.

Figure 3 - Norming study – gender distribution
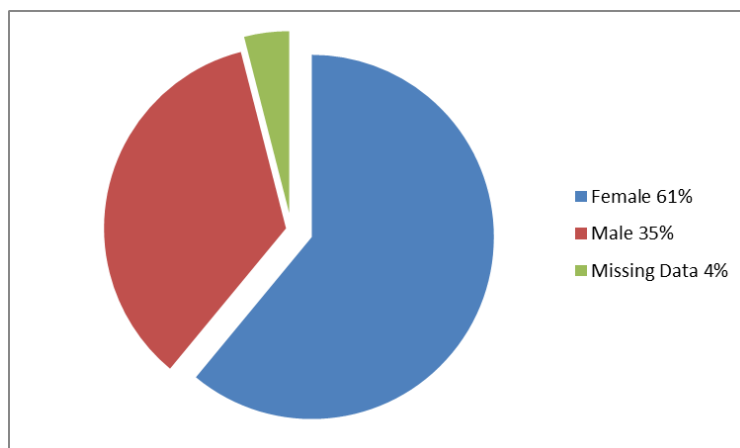
Figure 4 - Norming study - race distribution

- African 49%
- Coloured 21%
- Indian 13%
- White 17%
- Other 6.86%
- Missing data 2.61%
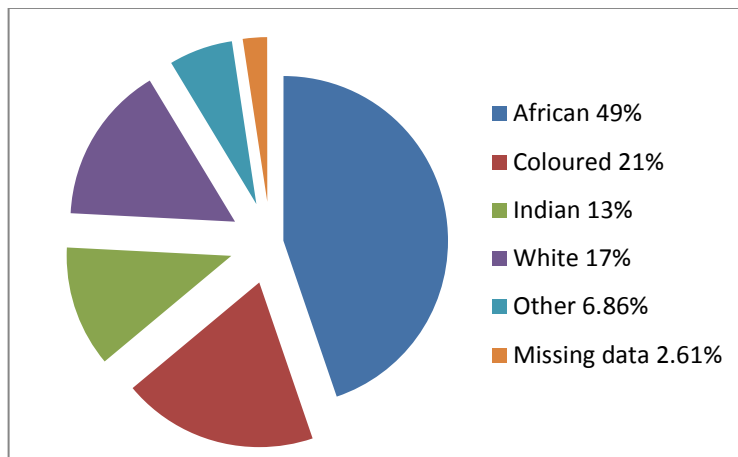
5.1.2. Experimental comparison of methods

For experimental rigour, participants were randomly assigned to a self-report method using an online Cross Methods Randomizing assistant across all data collection methods of the larger study (Urbaniak & Plous, 1997). This dissertation will only account for the following results and will only include the distribution across data collection methods comprising the focus of this study: SRQ, ACASI and UCT Type I. A total of 145 male (35%) and 265 female (65%) participants were assigned to one of the data collection methods (Figure 5). Each data collection method had the following distribution of participants: SRQ had 43 male and 62 female participants, 46 male and 59 female participants partook in the ACASI method with an additionally 56 males and 144 females in the UCT method (Table 3).

Figure 5 – Experimental comparison of methods - gender distribution
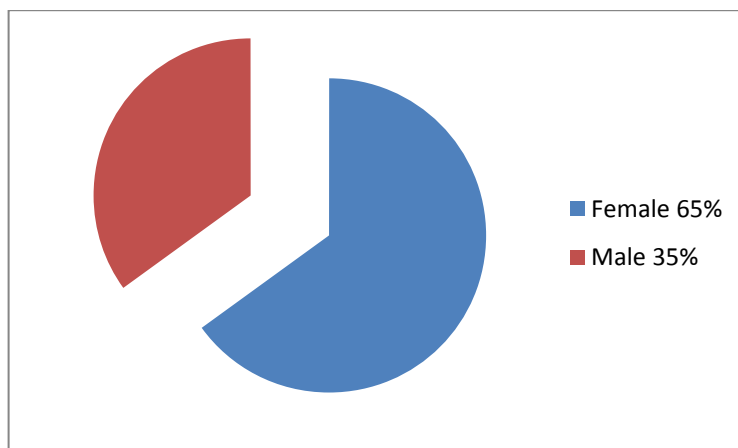
- Female 65%
- Male 35%

Table 3 - Experimental comparison of methods - gender distribution

	Method		
	SRQ	ACASI	UCT
Male	43 (41%)	49 (47%)	56 (28%)
Female	62 (59%)	59 (53%)	144 (72%)
Total	105	105	200

Demographics for the experimental comparison of methods do demonstrate an over- and under- representation of several groups (Figure 5). The sample over represents females while under representing males, respectively by 4%. Gender representation by the experimental comparison of methods was closely representative of the population. Racial representation by the experimental comparison of methods over represented several racial groups including Coloured (13%), White (16%) and 'other' (17%). All other racial groups were under represented; African (3%) and Indian (7%) racial (Table 4). Distribution in the groups under-represented in this section of the study may have been a result of recruitment representing participants who were willing to come to the lab/location. Participants were approached, offered information and then invited to the on-site location. The risk of participation bias is therefore acknowledged.

Across this study's data collection methods, SRQ, ACASI and UCT Type I, a total of 203 participants was obtained: 203 African (49%), 86 Coloured (21%), 53 Indian (13%) and 68 White (17%) participants (Figure 6). This part of the study had no 'other' participants. Making up just under half of the total sample, first year students account for the majority of respondents across three data collection methods (Table 5). With a majority of respondents sampled from the first year category of students with regards to the SRQ (62), ACASI (54) and UCT (87). By contrast second, third and fourth year students represent the smaller contributors to the sample, demonstrated in Table 5 and Figure 7.

Data collection methods SRQ and ACASI were each completed (105) with no discarded questions thus 100% response rate. A total of 228 UCT Type I questionnaires were completed with 28 discarded due to error. Thus, the UCT Type I had a response rate of 88% (87.7%). Each questionnaire method has a fairly high response rate which may indicate high accuracy of results.

Figure 6 – Experimental comparison of methods - race distribution

Table 4 - Experimental comparison of methods - race distribution

		Method		
		SRQ	ACASI	UCT
Race	Black	62 (59%)	54 (51%)	87 (44%)
	Coloured	18 (17%)	23 (22%)	45 (23%)
	Indian	10 (10%)	11 (11%)	32 (16%)
	White	15 (14%)	17 (16%)	36 (18%)

	Other	0	0	0
	Total	105	105	200

Figure 7 –Experimental comparison of methods –Year of study
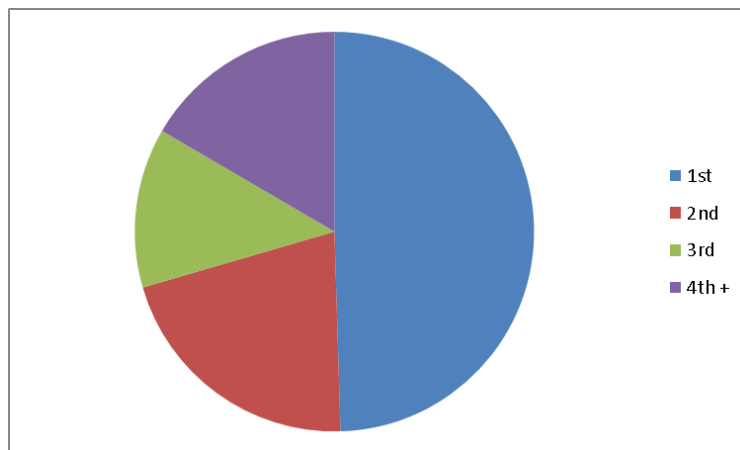
Table 5 – Experimental comparison of methods –Year of study

		Method		
		ACASI	SRQ	UCT1
Year of Study	1st	54 (51%)	62 (59%)	87 (44%)
	2nd	23 (22%)	18 (17%)	45 (23%)
	3rd	11 (10%)	10 (10%)	32 (16%)
	4th	17 (17%)	15 (14%)	36 (17%)

5.2. Norming study

The norming study was used to ascertain what was considered sensitive or private by university students in the research context (See Appendix C-D). This allowed for items to be extracted by factor analysis on two factors, sensitive and non-sensitive. Further analysis resulted in the use of a rotation method which produced a rotated component matrix (Appendix E).

Figure 9 – Scree plot
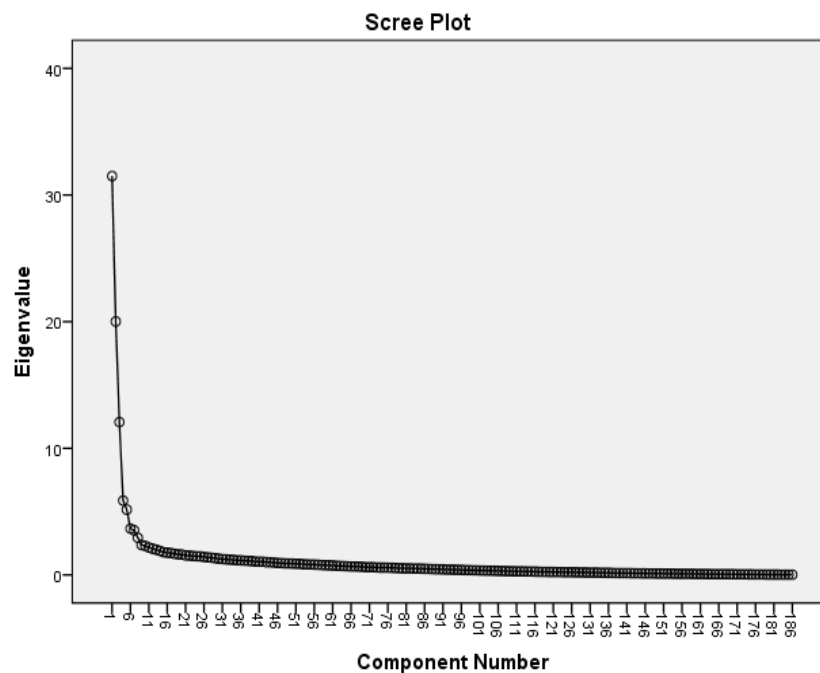
As demonstrated by the scree plot (Figure 9) all appropriate items loaded to show the movement towards sensitivity. Results of the Factor analysis gave rise to a total of 35 items considered as sensitive items. Items that were deemed repetitive or could be shortened were discarded resulting in the final 20 most sensitive items. The following items were rated as sensitive by participants, ascending to the most sensitive item:

1. Regret having had sex
2. Have forced someone to have sex with me
3. Have raped someone
4. Have raped someone together with one or more of my friends
5. Have had to slap, kick or bite to stop someone having sex with me

6. Have tried to get someone else intoxicated in the hopes of having sexual intercourse with them

7. Have had more than two sexual partners in the last three months

8. Have had sex with a partner who was 10 or more years older than me at the time

9. Have had sex with a teacher or lecturer

10. Have refused to use a condom

11. Have had sex with someone when I was so drunk that I do not remember it

12. Have engaged in sexual intercourse while under the influence of alcohol that I later regretted.

13. Have had sexual intercourse without a condom being used while under the influence of alcohol.

14. Have had sexual intercourse when so under the influence of alcohol that I was unable to consent.

15. Have had unprotected sex while knowing I am HIV positive and/or have a sexually transmitted infection

16. Have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, herpes, genital ulcer, idrop)

17. Am HIV positive

18. Have had sex with someone who isn't a regular partner because I've needed material things (e.g. rent, food, cosmetics).

19. Have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes).

20. Have been/ am in a sexual relationship in exchange for things I need (e.g. food, transport, accommodation, fees).

With reference to the scree plot as well as results of the factor analysis, a clear distinction between sensitive and non-sensitive items can be observed as items listed as non-sensitive include using the internet, owning a cell phone and going to Durban (Appendix E). In relation to spheres of sensitivity as highlighted in this research study, these items could be considered included as research into socially deviant behaviour. Sensitivity in relation to gender and racial factors will be further discussed in the section below.

5.3. Experimental comparison of methods

The results of the data collection methods SRQ, ACASI and UCT type I are reported in Table 6. These percentages were converted to proportionate data and used for further analysis.

Table 6 – Percentage of participants to disclose behaviour

| Sensitive statement | *Data Collection Method* | | |
	SRQ	ACASI	UCT
1. I am HIV positive.	4%	6%	Not calculable
2. I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).	20%	15%	74%
3. I have refused to use a condom.	12%	13%	22%
4. I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection.	5%	2%	Not calculable due to negative proportions
5. I regret having had sex.	34%	34%	Not calculable due to negative proportions
6. I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics)	11%	11%	86%
7. I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes).	14%	11%	64%
8. I have had more than two sexual partners in the last three months.	25%	34%	8%
9. I have had sex with a partner who was 10 or more	26%	20%	4%

years older than me at the time.			
10. I have had sex with a teacher or lecturer.	6%	11%	0%

These results were then used to calculate base rate estimates analyzed in the comparison between the three data collection methods. No conclusions can, therefore, be calculated from the before mentioned negative or overestimated base rates. The main statistical analysis program used was Winks (TextSoft, 2010) which makes a comparative summary of the proportions data of the SRQ, ACASI and UCT. The assessment aims to measure the effectiveness of each method in obtaining accurate levels of admission to sensitive behaviours.

Table 7 - Comparison of HIV/AIDS base rate estimates between data collection methods

HIV/AIDS domain			
Sensitive item	SRQ/ACASI	SRQ/UCT	ACASI/UCT
I am HIV positive	z = 0.665 p = 0.506	**	**
I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)	z = 0.953 p = 0.34	z = -7.75 p = 0.0	z = -8.511 p = 0.0
I have refused to use a condom.	z = -0.219 p = 0.826	z = -1.911 p = 0.056	z = -1.699 p = 0.089
I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection.	z = 1.183 p = 0.237	**	**
I regret having had sex	z = 0.0 p = 1.0	**	**

In an attempt to understand the impact of sensitive behaviour and risk of infection, it is critical to understand which data collection methods are effective in facilitating disclosure by participants. With many diverse methods, these items will be clustered into themed domains and analysed per sensitive item, for the purposes of meaningful reporting of each item.

In a comparison of data collection methods, the domain of HIV and AIDS was created to include unsafe sex behaviours such as non-condom use and awareness of HIV/AIDS status. Awareness of STD, HIV and AIDS status can play an important role in determining appropriate intervention procedures in research as well as continuing sexual behaviours for participants (Peacock, 2008). In a comparison of Self-report questionnaires (SRQ) and Audio Computer-assisted Self-interviewing (ACASI), no evidence was found that the data collection methods were significantly different for sensitive item 'I am HIV positive' (p = .506 > α = .05). While comparisons of Self-report questionnaires and Unmatched Count Technique Type I (UCT), as well as a comparison of ACASI and UCT could not be analysed due to overestimated proportions. Results for item 'I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)' indicated no evidence of difference across all the data collection methods SRQ and ACASI, SRQ and UCT as well as ACASI and UCT (p > α .05). .

Research confirms that condom use behaviour directly affects risk of infection; however accurate reporting of condom use by participants is problematic dependent on the exact phrasing of the question (Hensel et al., 2011; Holland & French, 2012). In this study, a comparison of data collection methods SRQ and ACASI, (p > α .05), evidence indicates no significant difference in data collection methods are for items related to condom use in the domain of HIV/AIDS. Comparisons across data collection methods SRQ and UCT as well as ACASI and UCT indicate no evidence that the data collection methods are significantly different, (p > α .05). Due to negative proportions, SRQ and UCT as well as ACASI and UCT could not be analysed for sensitive item 'I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection'. Furthermore, in a comparison of SRQ and ACASI (p > α = .05) evidence indicates no significantly different between the data collection methods.

Sensitive item 'I regret having had sex' has been included in the HIV/AIDS domain in instances where participants may have regretted sexual intercourse if they had been intoxicated or unprepared for sexually intercourse. The most commonly reported reason for regretted sexual intercourse include non-condom use as participants were either completely unprepared for the sexual interaction or do not remember using a condom. In a comparison of SRQ and ACASI for item 'I regret having had sex', ($p > \alpha$ .05), suggests no differences in proportions while data collection methods SRQ and UCT as well as ACASI and UCT could not be analysed due to negative proportions.

Table 8 - Comparison of MCP and Transactional sexual relationship domains' base rate estimates between data collection methods

MCP and Transactional sexual relationship domains			
Sensitive item	SRQ/ACASI	SRQ/UCT	ACASI/UCT
I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics)	z = 0.0 p = 1.0	z = -10.748 p = 0.0 *	z = -0.835 p = 0.403
I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes).	z = 0.657 p = 0.511	z = -7.358 p = 0.0*	z = -7.863 p = 0.0 *
I have had more than two sexual partners in the last three months.	z = -1.43 p = 0.153	z = -7.878 p = 0.0 *	z = -6.64 p = 0.0 *
I have had sex with a partner who was 10 or more years older than me at the time.	z = 1.033 p = 0.301	z = 4.377 p = 0.0 *	z = 3.499 p = 0.0*
I have had sex with a teacher or lecturer.	z = -1.299 p = 0.194	z = 2.488 p = 0.013*	z = 3.414 p = 0.001*

The grouping of these items is a focus on relationship issues such as multiple partners as well as transactional relationships. Within South Africa, these issue have been given considerable attention due to the increased reporting of these behaviours and the direct impact that it has on individual risk of infection (Ho-Foster, 2010; Peacock, 2008; Shaik, 2012). Results for transactional sexual relationship item, 'I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics)' and item 'I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes)' indicate no significant difference in a comparison of Self-report questionnaires and Audio Computer-assisted Self-interviewing ($p > \alpha = .05$). It is assumed that with a higher mean value Unmatched Count Technique Type I elicit higher disclosure rates for these items then data collection methods Self-report questionnaires and Audio Computer-assisted Self-interviewing ($p = .00 < \alpha = .05$). This evidence indicates that there is a significant difference between data collection methods, SRQ and UCT as well as ACASI and UCT, similar to a recent local study by Shaik (2012).

Across all items in the domain of MCP and Transactional sexual partnerships, a comparison of data collection methods SRQ and UCT Type I as well as and ACASI and UCT Type I demonstrated no significantly different, ($p > \alpha = .05$) , by both males and females participants. Whereas, in comparison to both data collection methods Self-report questionnaires and Audio Computer-assisted Self-interviewing, data collection methods UCT Type elicits greater disclosure for relationships item 'I have had more than two sexual partners in the last three months' ($p = .0 < \alpha = .05$).

Additional items such as older partners as well as partners in what is perceived to be influential or financially well-off positions were measured as commonalities of transactional sexual relationship and MCP (Ho-Foster, 2010; Jana, 2008). In a comparison of SRQ and ACASI no differences was evident in data collection methods for sensitive items 'I have had sex with a partner who was 10 or more years older than me at the time' and 'I have had sex with a teacher or lecturer' ($p > \alpha$ .05). Whereas SRQ and UCT as well as ACASI and UCT are significantly different for both items, ($p < \alpha$ .05) , similar to finding by Shaik (2012). Mean differences indicate that data collection methods SRQ and ACASI elicited higher disclosure rates then UCT Type I for item 'I have had sex with a partner who was 10 or more

years older than me at the time' (p = .0 < α .05). Similarly, disclosure rates for item 'I have had sex with a teacher or lecturer' indicate that indicate that data collection methods SRQ (p = .01) and ACASI (p = .00) elicited higher disclosure rates then UCT Type I.

Table 9 - Comparison of intoxication base rate estimates between data collection methods

Intoxication			
Sensitive item	SRQ/ACASI	SRQ/UCT	ACASI/UCT
I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted.	z = 2.09 p = 0.037	**	**
I have had sex with someone when I was so drunk that I do not remember it.	z = -0.418 p = 0.676	**	**
I have had sexual intercourse when so under the influence of alcohol that I was unable to consent.	z = -0.835 p = 0.403	z = -5.905 p= 0.0 *	z = -5.192 p = 0.0 *
I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol	z = -0.168 p = 0.866	z = 3.108 p = 0.002 *	z = 3.261 p = 0.001 *

Intoxication was defined in this study as the excessive use of alcohol and drugs in various degrees, subjectively by each person (Bianchi, 2005; Orchowski et al., 2012). Intoxication has been shown to have the effect of increasing sexual risk behaviours including unprotected sex, agreement to engage in sexual activity with new partners or engaging in unplanned sexual activities as well as failure to use a condom during sexual activity (Krebs, 2009; Morojele, 2004; Orchowski et al., 2012). In determining which data collection method is best, item analysis of 'I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted' and 'I have had sexual intercourse without a condom being used whilst I

was under the influence of alcohol' made a comparison of Self- Report Questionnaire and Audio Computer-assisted Self-interviewing, ($p > \alpha = .05$) , suggesting no evidence that the data collection methods are significantly different. Results across data collection methods SRQ and UCT as well as ACASI and UCT could not be analysed due to negative proportions.

Despite the comprehensive comparative data surrounding self-report methods, the efficacy of each seems to vary depending on the exact sensitivity of the item under investigation (Bianchi, 2005; Orchowski et al., 2012). With results here that demonstrate that nearly 82% of students regretted sexual interaction while under the influence of alcohol and/or drugs within a year, creating accurate baseline measures from self-report methods needs improvement and further advancement. This study further demonstrates that in a comparison of data collection method SRQ and ACASI, ($p > \alpha = .05$), indicated no significant difference for item 'I have had sex with someone when I was so drunk that I do not remember it'. SRQ and UCT as well as ACASI and UCT could not be analysed due to overestimated proportions. Finally, for item 'I have had sexual intercourse when so under the influence of alcohol that I was unable to consent' in a comparison of data collection method SRQ and UCT Type I as well as data collection methods ACASI and UCT Type I indicated significant differences ($p = .0 < \alpha = .05$). With a higher mean value, Unmatched Count Technique Type I elicit greater disclosure rates for these items then data collection methods Self-report questionnaires and Audio Computer-assisted Self-interviewing.

Table 10 - Comparison of coercive sex base rate estimates between data collection methods

Coercive sex			
Sensitive item	SRQ/ACASI	SRQ/UCT	ACASI/UCT
I have raped someone.	$z = 0.0$ $p = 1.0$	$z = -9.493$ $p = 0.0$ *	$z = -9.493$ $p = 0.0$ *
I have raped someone together with one or more of my friends.	$z = -0.464$ $p = 0.642$	**	**

I have forced someone to have sex with me.	z = 1.013 p = 0.311	**	**
I have been forced to have sex.	z = 1.013 p = 0.311	z = -5.314 p = 0.0 *	z = -6.111 p = 0.0 *
I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them	z = 0.56 p = 0.575	z = -8.589 p = 0.0 *	z = -9.027 p = 0.0 *
I have had to slap, kick or bite someone to stop them from having sex with me.	z = 0.212 p = 0.832	z = 0.879 p = 0.379	z = 0.672 p = 0.501

There is an acknowledged lack of reliable knowledge surrounding the best data collection method to use in sexual assault surveys as low reporting of sexual assault behaviours, by males and females, is largely affected by high social stigmatization. In analysis of 'I have raped someone' a comparison of SRQ and ACASI, ($p > \alpha$ = .05), indicating no difference in data collection methods. While results for a comparison of Self-report questionnaires and Audio Computer-assisted Self-interviewing to Unmatched Count Technique (p = .0 < α = .05) indicate a difference in data collection methods. In analysis of 'I have raped someone', Unmatched Count Technique Type I elicit greater disclosure rates for these items then data collection methods Self-report questionnaires and Audio Computer-assisted Self-interviewing.

Women have been shown to have significantly higher reporting of admitted rape rates than men, as documented cases of male victims is limited (Mohammadkhani et al., 2009). These issues are further problematized as males often reconstructed such sexual assault and rape as pleasurable experiences in addition to infrequently reporting women as sexual perpetrator. While this study does not differentiate genders, awareness of the best methods to test for these behaviours may result in greater accuracy in future studies. In a comparison between the SRQ and ACASI of 'I have forced someone to have sex with me', analysis indicated no

evidence that the proportions are significantly different ($p > \alpha = .05$). Due to negative proportions, a comparison of SRQ and UCT as well as ACASI and UCT could not be completed.

Coercive sex item 'I have raped someone together with one or more of my friends' demonstrated no difference in a comparison of SRQ and ACASI that with a p-value greater than .05 ($p > \alpha = .05$). Additionally as a result of negative proportions, SRQ and UCT as well as ACASI and UCT could not be analysed. In a comparison of SRQ and ACASI for item 'I have been forced to have sex', no evidence was found to indicate that the proportions are significantly different ($p > \alpha = .05$). Whereas, data collection methods SRQ and UCT as well as ACASI and UCT, $p < \alpha = .05$, indicates that there is a significant difference in proportions. Similar to item 'I have raped someone', UCT Type I elicit greater disclosure rates for these items then data collection methods ACASI for item 'I have been forced to have sex' ($p = .0 < \alpha = .05$).

Coercive sex item 'I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them', comparisons of data collection methods SRQ and ACASI suggests no evidence that the proportions are significantly different ($p > \alpha = .05$). Comparisons of disclosure rates to data collection methods SRQ and UCT as well as ACASI and UCT, indicate that there is a significant difference in proportions ($p = .0 > \alpha = .05$). For this item, UCT Type I elicited greater disclosure than ACASI while in a comparison data collection method SRQ and UCT Type I, with a higher mean value, SRQ elicits greater disclosure than data collection method UCT.

Finally, in the domain of coercive sex for item 'I have had to slap, kick or bite someone to stop them from having sex with me', a comparison of SRQ and ACASI indicating no difference in data collection methods for sensitive item ($p > \alpha = .05$) . Similarly, no difference is evident in a comparison of SRQ and UCT as well as ACASI and UCT ($p < \alpha = .05$).

5.3. Hay's five item social desirability scale

Analysis for the Hays et al. (1989) social desirability scale was run using SPSS statistical software 21. The five item Likert scale asked participants to rate their attitudes towards other people according to 1) definitely true, 2) mostly true, 3) don't know, 4) mostly false, 5)

definitely false. Social desirability scale analysis required the scale to be split retrospectively into socially desirable response or non-socially desirable response items. This allowed for the third group, 'don't know' to be dropped from analysis, scored as 0. Additionally, high scoring responses were coded as 1 for every socially desirable response while non-socially desirable response items were scored as 0. These scores were then transformed to a 0-100 score distribution with the intention of generating percentages for interpretation.

Table 11 –Descriptives of SDR by method

Descriptives

SDRgroup

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
SRQ	105	.3352	.30696	.02996	.2758	.3946	.00	1.00
ACASI	105	.3257	.27492	.02683	.2725	.3789	.00	1.00
UCT1	200	.3260	.27514	.01946	.2876	.3644	.00	1.00
Total	410	.3283	.28289	.01397	.3008	.3558	.00	1.00

The mean, standard deviation and standard error mean were accounted for as descriptive statistics for each data collection method. An ANOVA in SPSS statistical software 21 was used to test the significant difference between the data collection methods and Hays et al. (1989) social desirability scale.

Table 12 – Group Statistics

ANOVA

SDRgroup

	Sum of Squares	df	Mean Square	F	Sig.
Between (Combined)	.007	2	.003	.042	.959

Groups		Unweighted	.006	1	.006	.073	.787
Linear Term		Weighted	.005	1	.005	.062	.803
		Deviation	.002	1	.002	.023	.880
Within Groups			32.725	407	.080		
Total			32.732	409			

No statistically significant difference was evident between data collection method group scores in terms of social desirability responding (f = 0.042, df = 2, Sig 0.959> Alpha 0.05). Social desirability responding was similarly distributed across all data collection methods, SRQ, ACASI and UCT type I (refer Figure 9). Social Desirability analysis by gender as well as race indicated no statistically significant difference was evident between group scores in terms of social desirability responding. In analysis by gender, f = 0.021, df = 1, Sig = 0.885 > Alpha 0.05 indicating no difference in social desirability responding by males and females. Similarly, no difference in social desirability responding by racial groups was found, f= 0.848, df= 4, Sig = 0.495 > Alpha 0.05.

Figure 9- Socially desirable responding score per data collection method
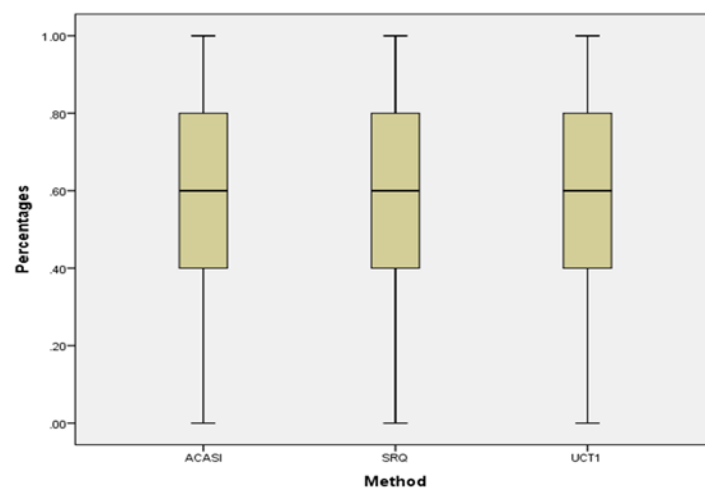
5.4. Experience of participation

An overall comparison of methods was done using a Chi-square test reported df = 8, chi-square sig = 0.704 > alpha = 0.05 indicating no significant difference among the data

collection methods. Further investigation into the comparisons experience of the data collection methods, SRQ, UCT and ACASI, was done using ANOVA by question.

The assumption of normality and homogeneity were analyzed to ensure that data analysis using ANOVA could be done. The distribution across the sampled data was normally distributed. With the exception of item 5 "I trusted this process and felt my responses were protected" the assumption of homogeneity of variance was accepted/corrected as all other items tested during Levene's statistics test indicated a $p = .045 >$ alpha .05 (Appendix G).

Table 13 – ANOVA output for Experience of Participation

Item 1 "I am confident that my responses were anonymous"	f = 0.262 and sig > alpha (0.770> 0.05)	Accept null hypothesis
Item 2 "I am confident that my responses will be kept confidential"	f = 0.155 and sig > alpha (0.856> 0.05)	Accept null hypothesis
Item 3 "I was comfortable responding to the questions in this format"	f = 0.563 and sig > alpha (0.570> 0.05)	Accept null hypothesis
Item 4 "I felt uncomfortable answering the questions in this way"	f= 2.853 and sig < alpha (0.059 < 0.05)	satisfactory evidence/strength to reject the null hypothesis
Item 5 "I trusted this process and felt my responses were protected"	f= 0.046 and sig > alpha (0.955> 0.05)	Accept null hypothesis
Item 6 "There is no way that my responses could be linked to me as a person"	f =3.492 and sig < alpha (0.031< 0.05)	satisfactory evidence/strength to reject the null hypothesis
Item 7 "I felt uncomfortable disclosing sensitive information about myself"	f = 4.556 and sig < alpha (0.011< 0.05)	satisfactory evidence/strength to reject the null hypothesis
Item 8 "I was comfortable enough to tell the truth"	f = 0.374 and sig > alpha (0.688< 0.05)	Accept null hypothesis

Item 9 "I was able to tell the truth and not worry about it being identified with me"	f =1.360 sig < alpha (0.258 < 0.05)	Accept null hypothesis

The observed differences in item 4, item 6 and item 7 resulted in further post hoc analysis to determine where the significant difference between data collection methods existed. Tukey HSD was used to determine where the difference in means was located while further controlling for Type I error. Tukey HSD was used as the test forms groups with the means as subsets that represent similarity while differentiating between the subsets with significantly different means. As demonstrated in Table 14, significant difference between data collection method SRQ and ACASI were found for item 4 "I felt uncomfortable answering the questions in this way". Interpretation of Tukey HSD reveals a clear preference for ACASI and an aversion for SRQ (Table 11).

Additionally item 6 "There is no way that my responses could be linked to me as a person" reported a significant difference between data collection methods ACASI and UCT (Table 15). Tukey HSD analysis validates similarities between the SRQ and UCT as well as the ACASI and SRQ (Table 12). Whereas, differences in experience of participation between UCT and ACASI data collection methods with a clear preference for data collection method UCT. Finally item 7 "I felt uncomfortable disclosing sensitive information about myself" confirms a difference between SRQ and UCT with clear similarities between data collection methods SRQ and UCT demonstrate with ACASI(Table 16). Further, Tukey HSD analysis demonstrates significant differences between SRQ and UCT indicate a preference to disclosure sensitive information by UCT Type I (Table 16).

Table 14-I felt uncomfortable answering the questions in this way

	Method	N	Subset for alpha = 0.05	
			1	2
Tukey HSD[a,b]	SRQ	105	3.32	

	Method	N		
	UCT1	200	3.66	3.66
	ACASI	105		3.77
	Sig.		.162	.797

Table 15- There is no way that my responses could be linked to me as a person

	Method	N	Subset for alpha = 0.05	
			1	2
Tukey HSD[a,b]	ACASI	105	1.69	
	SRQ	105	1.89	1.89
	UCT1	200		2.02
	Sig.		.280	.586

Table 16- I felt uncomfortable disclosing sensitive information about myself

	Method	N	Subset for alpha = 0.05	
			1	2
Tukey HSD[a,b]	SRQ	105	3.18	
	ACASI	105	3.42	3.42
	UCT1	200		3.66
	Sig.		.338	.329

CHAPTER 6 Discussion

The results of this study, namely the norming study and the experimental comparison of methods, will be discussed below. This research aimed firstly to understand what behaviours are considered sensitive or private by university students in respect of disclosure in the research context. The norming study was used to ascertain what university students consider sensitive or private in the research context. Primarily and secondly, this study investigated data collection methods in determining which self-report method is most valid and reliable when researching sensitive topics. A quantitative experiment compared the effectiveness of the Unmatched Count Technique (Type I), Self-Report Questionnaires and Audio Computer-Assisted Self-Interviews, in terms of their ability to elicit honest answers when dealing with the sensitive topics. The sensitive topics under investigation in this study are condom use (HIV/AIDS) as well as relationship such as transactional and multiple and concurrent partners. Additionally, a Social-Desirability scale was completed at the end of each questionnaire which aimed to make a comparison of data collection methods group rates of social desirability. Finally, the study quantitatively investigated participants' experiences of the different methods of survey.

6.1. Norming study

All participants have some levels of mistrust as well as issues with anonymity and protection in research, especially research surrounding sensitive issues (Dickson-Swift, 2008). This is further problematized as use of the word sensitivity is often neglected in definition and used as a word that is assumed to be easily understandable and commonly used (Dickson-Swift, 2008). We argue that this generates a concern and can be problematic for research dealing with the honesty and validity of self-report survey data in reflecting the sensitive activities of participants (La Brie & Earleywine, 2000). This research study developed the definition of sensitivity within the research process. The purpose of the norming study was to isolate truly sensitive behaviours as defined by the study, for this population from a diverse and expansive list. Literature by Alledahn (2011), LaBrie et al. (2000), Dalton et al. (1994) and Gregson et al. (2004), amongst others provided potentially useful and relevant items used to create the list of sensitive behaviours for the norming study.

Issues surrounding format and wording were all addressed in the norming study by means of referring to previous literature as well as through consensus by the current research team. Throughout this process, participants and external reviews were consulted in the correct manner of phasing words as well as the order of questions. In particular, the phrasing of terms as well as terms that needed further clarification were deliberated upon in this stage with the aim of strengthening consensus surrounding the sensitivity of each item. All terminology used included definitions understood by the population or creating meaning/bridging meaning with well understood terminology. In the interests of clarification, participants who were unfamiliar with terminology such as heavy petting were provided with clarification with easily understood and commonly used examples such as kissing and fondling in the survey instrument itself.

The outcome of the factor analysis in the norming study demonstrates a clear distinction between sensitive and non-sensitive items can be observed as items listed as non-sensitive include using the internet, owning a cell phone and going to Durban and sensitive items such as sexual coercive. Those highlighted as sensitive in the norming study are now recognised as issues which are intrusive on areas' that may be private, sacred, intimate, shameful or stigmatising by participants (Dickson-Swift et al., 2008; Lee & Renzetti, 1990). This encompasses two of the five spheres of sensitivity as highlighted in this research study as these items could be considered included as research into (a) individual personal/private experiences as well as (b) socially deviant behaviour. For the purposes of analysis all items were classified into one of five domains. Classification was based on relatedness to specific domains as follows: relationships, sex/intoxication, transactional sex, STD/HIV and coercive sex (Appendix E). Sensitive and non-sensitive items are needed for inclusion in all the survey methods as required in the larger study.

Further analysis of the sensitive items highlighted differences in gender and race (Appendix G). In terms of racial differences, the only one item which demonstrated a significant difference for race in terms of sensitivity was item "am HIV positive". This item was rated as significantly more sensitive by African students when compared to other racial groups (p = .007 > α = 0.05).

In terms of gender sensitivity, HIV/AIDS items demonstrated that females considered issues of HIV positivity, STD exposure and treatment as well as unprotected sex to be more

sensitive issues than males (Appendix G). While there was no demonstrated difference in sensitivity surrounding issues of condom refusal and sexual regret.

In the domains of MCP and Transactional sexual relationships, the item "have had sex with a teacher or lecturer' demonstrated a significant difference in gender as women regarded this item as more sensitive than men in the sample ($p = .010 > \alpha = .05$). This pattern is also reflected for items 'have had more than two sexual partners in the last three months' as females indicated greater sensitivity then males ($p = .000 > \alpha = .05$). No significant difference in the perceived sensitivity between males and females or across the race demographic was indicated for all other items related to the domains of MCP and Transactional sexual relationships (Appendix G).

While females indicated a higher level of sensitivity to the item 'Have had sexual intercourse without a condom being used while under the influence of alcohol' than males ($p = .006 > \alpha = .05$), intoxication items demonstrated the greatest consistency in terms of sensitivity for both genders and all racial groups (Appendix G). Issues surrounding intoxication that may lead to non-condom use, non-consent as well as sexual intercourse that is not remembered, were scaled as amongst the most sensitive items within the norming study.

Finally coercive sex items yielded diverse results with items such as 'have raped someone', 'have been forced to have sex' in addition to 'have tried to get someone else intoxicated in the hopes of having sexual intercourse with them' reporting no difference in sensitivity for both genders and all racial groups (Appendix G). Finally, results for items 'have raped someone together with one or more of my friends' ($p = .035 > \alpha = .05$), 'have forced someone to have sex with me' ($p = .025 > \alpha = .05$) and 'have had to slap, kick or bite to stop someone having sex with me' ($p = .000 > \alpha = .05$) demonstrated difference in sensitivity between the genders, as females rated this items as more sensitive than males in the sample.

6.2. Experimental comparison of methods

The primary objective of this research was to investigate data collection methods: Self-Report Questionnaire (SRQ), Audio Computer-Assisted Self-Interviews (ACASI) and Unmatched Count Technique (UCT Type I), in terms of their ability to elicit comparatively higher levels of disclosure when dealing with the sensitive topics as an analogue of reliability and validity. The sensitive topics discussed in this research paper were HIV/AIDS, transactional sexual relationships and Multiple and Concurrent Partnerships amongst a sample of 410 University Of KwaZulu-Natal students. In order to accurately differentiate between the Self-Report Questionnaire (SRQ), Audio Computer-Assisted Self-Interviews (ACASI) and Unmatched Count Technique (UCT Type I) in eliciting significantly different base rate estimates, sensitive behaviors were triangulated between data collection methods as this has been shown to be beneficial in improving our understanding of the differences in self-reported sensitive behaviours as recommended by Langhaug et al., (2011), Dalton et al. (1994), Shaik (2012) and Alledahn (2011). By comparing base rate estimates, it is assumed that a higher disclosure base rates indicates validity of the data collection method in eliciting information about the sensitive item. This is particularly relevant as comparisons of data collection methods on similar sensitive items, further validated use of the data collection method with the highest base rate estimates. The results of this study, presented above in Chapter 5, are discussed below and differences between methods refer to the differences analysed by pairwise comparisons between the SRQ, ACASI and UCT Type I.

Comparative performance of SRQ and ACASI

Past literature indicates that the degree of anonymity and privacy perceived by participants is a primary determinant of disclosure surrounding sensitive behaviours (Beauclair, 2013; Mensch, 2003). Ease of administration and relative cost effectiveness provided by SRQ methods enables easy interpretation and input of answers by participants; however, it is still assumed that the ACASI would elicit higher levels of disclosure for the reasons listed below (Richter & Johnson, 2001). Research has indicated that ACASI provides greater perceived anonymity and privacy as serving motivation for responding truthfully (Beauclair, 2013; Mensch, 2003). Whilst there are behaviours with a greater reported incidence by the ACASI method, in a comparison of data collection methods, Self-Report Questionnaire (SRQ), Audio Computer-Assisted Self-Interviews (ACASI), no statistically significant difference between

SRQ and ACASI disclosure rates was found (Table 7- 10). We therefore accept the null hypothesis as there is no significant difference in base rate estimates of sensitive behaviour disclosure between Self-Report Questionnaire and the Audio Computer-assisted Self-interviewing

Across all sensitive items, participants are encouraged to answer questions honestly, however participants showed preference to reporting sexual behaviour by the data collection method ACASI (Mensch et al., 2003).With continuing advancements in the improvement of survey methods, it is expected that the ACASI methods would have greater effectiveness in eliciting valid answers from participants however, familiarity with traditional SRQ methods may account for non-significant results. Traditional Self-Report Questionnaires are often associated with ease of use as participants are most familiar with completing simple true and false questionnaires in many forms. While authors have highlighted that issues with ACASI such as strain of navigating the computerised questionnaire can affect participants' recall of information

Studies by van der Elst et al. (2009) and Perlis et al. (2004) reported that the ACASI does place a great burden of time on participants, which is confirmed in this study as completion of ACASI surveys takes twice as long as SRQ surveys. This study will later link results of the experience of participants in considering possible explanations for non-significant results.

Comparative performance of the UCT and SRQ

Previous studies have demonstrated UCT superiority to traditional SRQ by a ratio of nearly 1:3 at providing higher estimates of sensitive behaviours (Dalton et al., 1994). The statistical results of this study in the comparison between the Self-Report Questionnaire and the Unmatched Count Technique indicate a significant difference in base rate estimates of sensitive behaviour disclosure. We therefore reject the null hypothesis and accept the alternate hypothesis as there is a significant difference in base rate estimates of sensitive behaviour disclosure between the Self-Report Questionnaire and the Unmatched Count Technique.

Results of this study indicate that data collection method Unmatched Count Technique Type I had higher base rate estimates than Self-Report Questionnaires. These results are in agreement with existing literature as UCT consistently reported higher disclosure rates of sensitive behaviours than the SRQ (Dalton et al., 1994; Shaik, 2010). In addition, the UCT method has produced higher affirmative responses for items surrounding relationship issues than traditional SRQ questioning. These results indicate greater reluctance in disclosing in SRQ than UCT surveys surrounding stigmatising or shameful issues (Shaik, 2012; Walsh & Braithwaite, 2008). With the expectation of the un-analysable results, it can be argued that the UCT consistently provided participants with greater perceived privacy, thus it was expected that participants would truthfully divulge their own sensitive behaviours.

Comparative performance of the UCT and ACASI

Although there are various exploratory studies regarding findings on validity and reliability of other self-reported methods, there are currently no comparisons of UCT to ACASI. The results of this study indicate that the UCT does obtain higher levels of disclosure of sensitive items in comparison to the ACASI. We therefore reject the null hypothesis and accept the alternate hypothesis as there is a significant difference in base rate estimates of sensitive behaviour disclosure between the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique.

Across all sensitive items that could be analysed, the UCT presented the highest degree of disclosure compared to the ACASI. This may signify that in a comparison the UCT and ACASI, UCT Type I provides greater instructive and anonymity properties. The ACASI data collection method does however have advantages as computerised survey methods for participants. This includes 1) responses are automatically and numbered entered into the database ensuing greater perceived privacy as well as providing 2) instructions repeated on screen which result in less confusion. This aims to enable participants with minimal literacy skills to successfully complete (Richter & Johnson, 2001).

The degree of anonymity and privacy perceived by participant is a primary determinant in sensitive behaviour surveys which is strongly associated with the use of the UCT Type I.

This study will attempt to link results of the experience of participants in considering possible explanations as to possible reasons for the UCT to obtain higher levels of disclosure of sensitive items in comparison to the ACASI.UCT has previously been shown to be advantageous for sensitive behaviour surveys in a comparison to other data collection methods as participants perceive greater privacy in identifying how many items applying to them(Walsh, 2008). This can be further applied in a comparison of ACASI and UCT, as UCT demonstrate that increased perceived anonymity results in greater reporting and thus reducing misreporting (Walsh, 2008).

6.3. Negative proportions

The Unmatched Count Technique Type I have previously been shown to be advantageous in gaining more accurate estimate of the base rate for sensitive behaviour. For participants, this method provides a perceived protection as no participant is required to indicate which of the items they endorse but rather just how many apply to them. Participants are allowed to be honest about their behaviour due to increased perceived anonymity and thus reducing misreporting by participants (Walsh &Braithwaite, 2008).

While UCT procedures do provide clear and simple guidelines, there is still the risk of misunderstanding the technique as well as instructions. The use of UCT Type I in this study resulted in many questionable and therefore problematic proportions. This can be seen in results such as negative proportions or proportions above 100%. Negative probability estimates, in particular, calls into question the reliability and validity of the UCT in obtaining accurate results. Glynn (2010) highlights that negative proportions are a result of incorrect sample size or misrepresentation and perhaps misunderstanding of the research question.

Within this study, negative proportions and proportions of 100% indicate that some participants may have misinterpreted the instruction of how many and indicated which item was true for them. For example, by indicating that item 4 in an item set was true for them rather than indicating that a total of 4 items were true for them in each item set. Alternatively, participants may have responded by emphasizing the number of items which they hadn't done or 'no' instead of highlighting answers which they had or 'yes' answers. Negative proportions as well as proportion of 100% can therefore be interpreted as linked to SDR as

participants may respond this way in the belief that 'yes' responses are endorsements of the sensitive behaviour.

As a result the simplicity and security that the UCT type I afforded to participants may be problematic. These problematic proportion estimates may be argued to be the result of measurement error rather than reliably reflecting participants' indication of sensitive items. As a result, proportions of 100% in addition negative proportions may indicate underreporting or excessive over reporting creating an imbalance.

6.4. Base rates of sensitive behaviours

Base rate estimates of sensitive behaviours were analysed in this study to compare survey methods. The base rate estimates themselves were not the main aim of the study; they are however interesting in their own right and warrant some discussion here. The sensitive behaviours under discussion in this research were grouped by domain and will be discussed according to their domain relatedness. This analysis is a discussion surrounding STD/HIV items and relationships items such as transactional and MCP relationships amongst university students.

In a country battling the most severe HIV/AIDS epidemic in the world (HEAIDS, 2008), a review of results by participants indicate prevalence rates for risk behaviours that may be interpreted as increasing exposure to HIV/AIDS with between 4-6% of participants positively responded to the item "I am HIV positive". With the correct interventions and medications, living with HIV/AIDS is no longer the death sentence it used to be. However, providing all UKZN students with access to helpful and usable information and assistance may further contribute in decrease infection rates. This is particularly relevant in conjunction with other reported sensitive behaviour.

With condom distribution and availability steadily increased each year, condom use amongst participants remains problematic. HEAIDS (2010) reported that in an investigation of condom use on UKZN campuses, inconsistent condom use increased risk of STI infection with a reported 4-12% of participants requiring treatment for sexually transmitted infections in the past three months. While the results of this study indicate that between 15-74% of participants have been treated for a sexually transmitted infection. This further demonstrates

the huge variability of results dependent on the data collection method used. A possible indication of substantial increase of STI raises an important area to address by UKZN and other tertiary intuitions for improved intervention methods as STI increases susceptibility to HIV infection and AIDS. As the easiest means to prevent and protect against HIV/AIDS infection, condom use by participants may be interpreted as minimal among participants as 12-23% of participants in this study indicate continued condom use refusal.

These results may reflect common beliefs surrounding condom use including condom use leading to discomfort, distrust in relationships as well as an undesired interruption during sexual intercourse (Schuster, 1998). Although participants acknowledge non-condom use as the primary reason for increased risk of infection, this does not often result in increased condom use as demonstrated in this study, with between 2-5% of participants reporting continued sexual intercourse whilst knowing their HIV positive status and/or having a sexually transmitted infection.

Additional results by participants indicate engagement in various types of relationship items. HEAIDS (2008) indicate that intentional multiple and concurrent relationships are most commonly reported by males (51%) in comparison to females (26%). While this study did not analyse gender in multiple partners, results indicate that between 8-25% of participants have had more than two sexual partners in the last three months. The greatest concern for MCP is a combination of two risk behaviours, low condom use and concurrency, resulting in increased risk of STI, HIV and AIDS transmissions (Alledahn, 2011). The occurrence of this behaviour may, however, be a result of the acceptance by participants in various studies surrounding the normalcy of infidelity as an inevitable part of a relationships (HEAIDS, 2008; Ho-Foster et al., 2010, & Peacock et al., 2008).

Transactional sexual relationships are characterised by exchange of groceries, rent, alcohol, money, fashionable clothes and/or cosmetics for sexual favours. While previous results by Shaik (2012) indicate that 2-22% of participants of the UKZN sample engaged in transactional sex relationships, results of this study reported 11-86% of participants' engagement in transactional sexual relationships demonstrating variability of results dependent on the data collection method used (Alledahn, 2011; Shaik, 2012).

Regardless of relationship situations, transactional sexual relationships and Multiple and Concurrent Partnerships, participants may fail to perceive their heightened risk of infection and therefore unable to address issues of risk (Alledahn, 2011). As a result, condom use negotiation may not occur in these relationships despite previous intentions to exercise safe sexual practices (Abels & Blignaut, 2011). Differences in age and social position often affect accepted norms and expectations around relationships. With between 4-26% having had sexual intercourse with a partner who was 10 or more years older as well as 6-11% of participants having had sexual intercourse with a teacher or lecturer, it is necessary to bring greater awareness of high-risk behaviour for transmission of STI, HIV and AIDS.

There are many challenges surrounding campaigns targeting safe sex practices particularly in terms of accurate information of frequency within the population. Sensitive behaviour practices by participants is often misreported due to SDR with strong perceived social pressure to conform to norms resulting in high bias in self-reports data (Jana et al., 2008; Peacock et al., 2008). Thus, it is critical to have reliable and valid baseline data with the aim of creating effective awareness campaigns as well as prevention and support programmes. With high reported prevalence of unsafe sexual practices such as non-condom use as well as transactional sexual relationships and MCP, interventions should be targeted at promoting safer sex practices regardless of relationships.

6.5. Social Desirability Responding

Null hypothesis: There is no significant difference in group rates of social desirability between the Self-Report Questionnaire, the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique.

Alternate hypothesis: There is a significant difference in the group rates of social desirability between the Self-Report Questionnaire, the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique.

The Hays five-item social desirability scale was analysed in terms of its aggregate scores in association with the self-report questionnaire method. The 5 item scale was attached to each of the self-report delivery modes (see Appendix F). With the aim of enabling accurate analysis, the 5 item Hays SDR scale was chosen as previous studies constantly demonstrate the 5 items clearly distinguished degrees of social desirability by each data collection method (Alledahn, 2011; Hays et al., 1989). Additionally, the shortened scale places a reduced burden on the participant to complete (Hays et al., 1989). The five item Likert scale asked participants to rate their attitudes towards other people according to 1) definitely true, 2) mostly true, 3) don't know, 4) mostly false, 5) definitely false. ANOVA in SPSS statistical software 21 was used to test the significant difference between the data collection methods and social desirability scale.

Cronbach's alpha is a coefficient of internal consistency, and tests the function of the instrument by indicating how well on a score of 0 to 1 the scale reliably tests what it is intended to measure (Hays et al., 1989). Analysis of Hay's Social Desirability Scale for this study comprised 5 items with reported Cronbach's alpha = 0.130 indicating an extremely low reliability value in comparison to Cronbach's alpha = 0.66 - 0.68 of Hays original scale (Hays et al., 1989). The results of this study should therefore be interpreted with caution as differences in population sample may contribute to low reliability of the scale (Alledahn, 2011). As a result, factors such as different population characteristics as well as changes in sociatal influences may affect the degree to which the scale measures SDR.

In an analysis of social desirability scores across data collection methods, SRQ, ACASI and UCT type I, no statistically significant difference was evident (p = .007 > α = .05). We therefore accept the null hypothesis that there is no significant difference in group rates of social desirability between the Self-Report Questionnaire, the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique. No differences in Social Desirability Responding by data collection method were found. This may indicate that that data collection methods the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique Type I do not prompt or discourage socially desirable responding by participants. These results however, should be interpreted with caution due to the low Cronbach's Alpha indicated above. Interpretation of these results may mean that regardless of data collection method, participants will continue to respond in socially desirable ways, tending to be less

than truthful with information that may depict them negatively (La Brie et al., 2000). As a result, participants may continue to underreport socially deviant behaviour while over-reporting socially acceptable desirable behaviours (Hays et al., 1989).

In further assessment, a comparison of gender using Hays five-item social desirability scale, (f = 0.021, df = 1, Sig = 0.885 > Alpha 0.05) indicated no difference in social desirability responding by males and females. Similarly, no difference in social desirability responding by racial groups was found, f= 0.848, df= 4, Sig = 0.495 > Alpha 0.05.Similar to the results of Social Desirability Responding across data collection methods, no differences could be found in SDR across race and gender (Appendix G). Thus the results for race and gender may indicate that SDR will constantly produce biased results when investigating sensitive behaviour (Langhaug, et al., 2011; Shaik, 2012). While it was expected that some difference would be found, no significant results may further indicate that SDR will produce bias in data dependent on the degree to which the behaviour is sensitive rather than the method used (Langhaug, et al., 2011).

6.5. The Experience of Participation

Null hypothesis: There is no significant difference in the participants' experiences between the Self-Report Questionnaire, the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique.

Alternate hypothesis: There is a significant difference in the participants' experiences between the Self-Report Questionnaire, the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique.

In an enquiry about the experience of participants of each of the methods, an overall comparison between data collection methods SRQ, ACASI and UCT type I, demonstrated no significant difference. We therefore accept the null hypothesis that there is no significant difference in the participants' experiences between the Self-Report Questionnaire, the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique. However, in a closer examination of items, key differences can be identified.

Firstly, results of item 4 "I felt uncomfortable answering the questions in this way" indicated evidence that in a comparison between data collection methods where $p = .059 > \alpha = .05$, that data collection methods were significantly different. As a result, further analysis of Tukey HSD was completed which demonstrated similarities between the Self-Report Questionnaire and Unmatched Count Technique as well as similarities between the Audio Computer-assisted Self-interviewing and the Unmatched Count Technique. As there have been no comparisons of Unmatched Count Technique and Audio Computer-assisted Self-interviewing, the similarities for UCT and ACASI should be noted.

The significant differences found by Tukey HSD analysis for this item were found between data collection methods Self-Report Questionnaire and Audio Computer-assisted Self-interviewing. Tukey HSD additionally reveals a clear preference for ACASI and an aversion for SRQ (Table 11). While this study did not make further inquiries into the exact reason for this preference, past research by Reichmann (2010), Beauclair (2013) and Mensch (2003) indicate that factors such as the assisted audio output and ease of use by participants may be factors that contribute to preference of use by participants Additionally, ACASI does have the advantage of perceived privacy and anonymity by participants which serves as motivation for responding truthfully, similar to UCT.

Secondly, with satisfactory evidence to reject the null hypothesis item 6 "There is no way that my responses could be linked to me as a person" reported $p = .031 > \alpha = .05$. This indicated that participants may not have believed that their identities were protected or that the data collection methods were not anonymous resulting in participants responding in ways that protects their self-image rather than truly disclosing their behaviour. Tukey HSD analysis validates that participants perceived the SRQ and UCT to have similar levels of anonymity as well as similar levels of anonymity between data collection methods ACASI and SRQ (Table 12). Whereas, a clear difference in experience of participation between UCT type I and ACASI data collection methods indicated a preference by participants for data collection method UCT Type I. Various studies confirm that UCT affords participants a greater degree of perceived anonymity (Dalton, 1994; Walsh, 2008). As participants do not overtly indicate which items are true for them, they may perceive a decreased likelihood of their sensitive items being distinguished from non-sensitive items as well as no probability of these results being linked to them.

Most notably, satisfactory evidence was found to reject the null hypothesis in a comparison between data collection methods where $p = .011 > \alpha = .05$ for item 7 "I felt uncomfortable disclosing sensitive information about myself". Participants indicated feeling similar levels of discomfort about disclosing sensitive information between SRQ and ACASI. Significant differences are reported between SRQ and UCT as reported by Tukey HSD analysis (Table 16) as participants indicate a preference for UCT when disclosing sensitive information than SRQ. The indicated preference for Unmatched Count Technique Type I may be the result of perceived protection provided as participants indicate how many items rather than which items apply to them (Dalton, 1994 ;Walsh, 2008). As a result, participants assume that the researcher is unable to distinguish sensitive item from the total number of items is indicated. This perceived privacy afforded to participants by the UCT method enables participants to honestly and safely answer without fear of stigmatization (Dalton, 1994 ;Walsh, 2008).

CHAPTER 7 Recommendations and Limitations

The norming study had aimed to create the first scale for sensitive items as rated by university students. Throughout the process there have been several strengths however, as this study is a first attempt at scaling sensitive behaviours, there are improvements which can be made.

There should be consideration to change the scale on which the norming study is rated. Individuals were asked to rate the sensitivity of all items by answering 'I regard the item as so sensitive that if true about me, I would not want anyone to know about it'. Participants scaled their responses on a four point Likert scale: 1) True for me, 2) Partially true for me, 3) Partially NOT true for me and 4) Not true for me at all. Individuals who had not done the behaviour listed in each item, were also instructed to answer as if all the items were true for them or as if they had in fact done the behaviour. However, either due to the vast number of items or lack of clear instructions, some participants answered as if they had indeed done the behaviour or hadn't, only. As a result, 16 of the 316 completed norming questionnaires were discarded. In consideration for future attempts at the norming of sensitive behaviour, researchers should firstly consider reducing the number of total items for participants to scale. This could possibly be done by choosing a single grouping of behaviour such as intoxication or sexual items. Secondly, the points of the Likert scale could be altered for clarity. Participants could possibly answer in terms of "I regard the following as so sensitive that if it were true about me, I would not want anyone to know about it" on the following scale 1) extreme sensitivity, 2) mild sensitivity or 3) no sensitivity. Similarly participants would rate the sensitivity of the behaviour regardless of whether they have or have not done the listed behaviour.

Among the data collection techniques, UCT provided privacy by providing means for participants to disclose highly stigmatised behaviours. Within this study however the results of the UCT should be interpreted with the greatest caution. Proportions calculated from the UCT proved to be problematic. This may have largely been due to misinterpretation of the instructions as to how to answer. Participants were instructed to indicate how many of the items applied to them rather than which of the items as well as an example of how this is done. Future studies could possibly run pilot or instructional studies as a means of instructing participants in the best way to answer the UCT.

The study with regard to sample size has been largely influenced by recommendations of past literature. In particular, Dalton (1994) advised that that each data collection method have 40 to 50 participants as a minimum to ensure validity of results. With reference to the UCT, Dalton indicates that sample of 50 or more participants increase estimate stability (Dalton et al., 1994). As a result, this study had a total number of 410 participants: 105 SRQ, 105 ACASI and 200 for the UCT Type I. Randomisation across the data collection methods in the larger study aimed to improve validity and reliability within the study. The sample however is not representative of the UKZN student population, 2013. The experimental comparison of methods sample over represented several racial groups including Coloured, Indian, White and 'Other' while underreporting African racial groups. Additionally, females were excessively over represented while males were under represented. Greater efforts can therefore be taken to ensure that while the sample is randomised, it continues to represent the larger UKZN population.

Lastly, the experience of participation used in this study made use of a between subjects design that required each participant to rate the singular method they had completed, however, a comparison of all three methods by one participant may reach different results. While individuals' can assess the one data collection method they took part in, a comparative investigation across more than one method may provide for greater reliable and valid comparison of participants' experience of participation. Each individual participant could therefore be asked to do more than one data collection method followed by an experience of participation survey. With the aim of further clarification, the larger Phd study will include a within subjects repeated measures design which may well offer some clarity on the findings reported here.

CHAPTER 8 Conclusion

This research project had several objectives. Firstly, a norming study was used to ascertain what behaviours are considered sensitive and non-sensitive by the sample population. The results of which were used in the experimental comparison of methods. A total of 71 items was drawn from the results of the norming study: 20 of the most sensitive items, 26 related non-sensitive and 25 non-related non-sensitive items were used in the implementation of the study (Appendix E). These items were used across data collection methods of the larger study, with the exception of UCT data collection methods. Overall, the norming study process highlighted the complexity and challenge of quantifying sensitive behaviours, as these behaviours are largely affected by participant interpretation and societal influences.

Secondly, this research study investigated the degree to which self-report data collection methods differ in rates of disclosure of sensitive items as an analogue of reliability and validity. Triangulating sensitive behaviours between data collection methods has been shown to be beneficial in improving our understanding of the differences in self-reported sensitive behaviours as recommended by Langhaug et al., (2011), Dalton et al. (1994), Shaik (2012) and Alledahn (2011). The experimental comparison of methods investigated the following self-report questionnaire methods: Unmatched Count Technique (UCT), Audio Computer-assisted Self-interviewing (ACASI) and a self-report questionnaire (SRQ). Mixed performance of each data collection was noted throughout this study; however, the data collection method the UCT continues to yield higher prevalence rates of sensitive behaviours (Dalton et al., 1994; LaBrie & Earleywine, 2000; Alledahn, 2011). While no significant difference was found between data collection methods in terms of Social Desirability Responding, the base rate estimates of the UCT in this study lend support to the emerging body of evidence that this method presents important advantages when investigating sensitive behaviours. Finally, while no significant difference was found overall among the data collection methods, each data collection method does in its own way provide participants with varying degrees of use, anonymity and protection of confidentiality.

As a subsidiary function of this section of the study, the experimental comparison of methods provides insight into the percentage of participants involved in the sensitive behaviours measured in this study. The results indicate that some percentage of participants have been or

are involved in risky practices, increasing their risk of infection. With increasing knowledge surrounding the reliability and validity of data collection methods, researchers can be better equipped to generate quality information while balancing for methodological rigor, particularly surrounding sensitive topics. In the era of the HIV and AIDS epidemic, credible knowledge surrounding sensitive issues which have a detrimental effect on individual health are fundamentally important for social science, public health and medical research prevalence studies, intervention planning, monitoring and evaluation (HEAIDS, 2010; Makiwane & Mokomane, 2010).While this study does have varying degrees of admitted behaviour by participants across data collection methods, further investigation into the exact prevalence of sensitive behaviours' should be done to assist University of KwaZulu-Natal students to better manage and/or reduce involvement in sensitive behaviours. With awareness of the best data collection method, accurate baseline data can be collected to develop effective prevention and support programmes.

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APPENDICES

APPENDIX A - ETHICAL CLEARANCE

UNIVERSITY OF KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

23 August 2013

Mr Vernon Solomon
School of Applied Human Sciences – Psychology
Pietermaritzburg Campus

Protocol reference number: HSS/0837/013CA

Full Approval Notification-Amendment

This letter serves to notify you that your application for an amendment dated August 18, 2013 has now been granted Full Approval.

1.   Ref: HSS/0837/013CA, Ms Hafsah Shaik 209504814, School of Applied Human Sciences – Psychology. Project title: An experimental psychometric study comparing the sensitive data disclosure rates of different survey modes, the Audio Computer Assisted Self Interview, Self-Report Questionnaire and the Unmatched Count Techniques Type 1 and Type 11, among University of KwaZulu-Natal students.

2.   Ref: HSS/0837/013CA, Ms Lauren Stella Fynn 208522355, School of Applied Human Sciences – Psychology. Project title: An experimental measurement cross-sectional study comparing sensitive data disclosure rates of different survey modes among University of KwaZulu-Natal students.

3.   Ref: HSS/0837/013CA, Ms Tarryn Ann Blake 204515599, School of Applied Human Sciences – Psychology. Project title: The reliability and validity of questionnaire delivery mode in social science research: a comparative study investigating disclosure rates of sensitive behaviours in university students, comparing three different questionnaire methods.

4.   Ref: HSS/0837/013CA, Ms Chanél Visser 209509180, School of Applied Human Sciences – Psychology. Project title: Students' rates of disclosure on sensitive sexual behaviours: A comparative study using methods of the Unmatched Count Technique 1 (UCT 1), Unmatched Count Technique 2 (UCT 2) and Self-Report Questionnaires (SRQ).

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 an amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the discipline/department for a period of 5 years.

Humanities & Social Sciences Research Ethics Committee
Dr Shenuka Singh (Acting Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban, 4000, South Africa
Telephone: +27 (0)31 260 3587/8350/4557 Facsimile: +27 (0)31 260 4609 Email: ximbap@ukzn.ac.za / snymanm@ukzn.ac.za / mohunp@ukzn.ac.za
Website: www.ukzn.ac.za

Founding Campuses: ■ Edgewood   ■ Howard College   ■ Medical School   ■ Pietermaritzburg   ■ Westville

INSPIRING GREATNESS

105

APPENDIX B- CFC REFERRAL CONFIRMATION

14 March 2013

To whom it may concern

This letter serves to provide the assurance that should any interviewee require psychological assistance as a result of any distress arising from the approved research process conducted by students in the Discipline of Psychology, School of Applied Human Sciences, Pietermaritzburg campus; it will be provided by psychologists and intern psychologists at the UKZN Child and Family Centre.

Yours sincerely

Professor D.R. Wassenaar

Academic Leader

Discipline of Psychology

School of Applied Human Sciences

APPENDIX C - NORMING STUDY INFORMATION AND CONSENT FORM

Sensitive items: Norming study questionnaire:

Information and Consent for participation in the study: Norming sensitive behaviours amongst a tertiary student population.

Who we are and what we are doing.

Hello, we are a group of Psychology Honours, Masters and PhD students involved in a study investigating the effect of different questionnaire, survey and interview methods on the rates of disclosure of sensitive behaviours amongst university students. This study is designed to help inform researchers on the best methods for finding out how many people in a population are affected by an issue. This information can be used to improve research on these issues and intervention and prevention programmes to address them.

In this first part of the study, we want to know from students how sensitive or how private, they think a list of behaviours is. In the second part of the study, we want to be able to compare different methods to see how well they perform in facilitating participants' disclosures of sensitive issues. In the second part of the study, we will include the behaviours you have identified as sensitive.

Invitation to participate and implications of participation

We invite you to participate in this first part of the study, which will involve completing a tick-box questionnaire that asks you to identify how sensitive an issue is. We will be asking you to rate a list of items that concern matters related to alcohol, drugs and sex in terms of how sensitive you think they are for you, if assuming they were true for you, they were to be known by others such as researchers. There are no direct benefits for your participation in this part of the study.

Should you decide to participate, you may withdraw at any time without any consequence.

You will not need to sign anything, so your participation and your questionnaire will be completely anonymous and confidential. We will ask you to complete a section on your demographics, like age and sex. None of your responses will be able to be linked to you personally.

It should take you 30 minutes or less to complete the questionnaire.

How your data will be used

The data that arises from your participation will be entered into a database and analysed statistically. This will be used to inform phase 2 of the study that compares different methods of interviewing and surveying participants. The data may also be presented at conferences or be published. The data will also be written up as part of a series of Honours, Masters and PhD dissertations by all the participating researchers.

How you are protected.

It will not be possible to identify personal details of any participant so your participation and your responses will be entirely protected and confidential. This data will be shredded after entry into the database and stored electronically for 5 years after which it will be destroyed.

You may withdraw at any time without any consequence.

In the unlikely event that participation causes you any personal discomfort or distress, you may contact any of the researchers (listed below) for a referral to the counseling service of your College or to our School's Child and Family Centre. All these contact details are provided below.

If you have complaints or concerns about the study, you may contact the supervisor of the research, Vernon Solomon, (Solomon@ukzn.ac.za), supervisor of Mr. Solomon's PhD, Prof. Kevin Durrheim (durrheim@ukzn.ac.za) or the Chairperson of the UKZN Social Science research Ethics Committee through the secretary Ms. P. Ximba (ximbap@ukzn.ac.za).

Consent

In order to offer you the maximum protection, we are only asking you to indicate your consent by completing the questionnaire.

By completing the questionnaire, you give your consent to participate in the study as described above and indicate that you have understood and agree to the conditions of participation. You also confirm by participation that you are over 18 years of age and legally entitled to give your informed consent to participate in this research.

Thank you for your willingness to consider this and for your participation.

Researchers and Contact Details for concerns and questions

Course	Name	Email	Cell:
Honours:	Alex Bailey	210503919@stu.ukzn.ac.za	0825028735
	Ashleigh De Beer	210525436@stu.ukzn.ac.za	0832611843
Masters:	HafsahShaik	hafsahshaik@yahoo.co.uk	0795924286
	Lauren Fynn	lsfynn@gmail.com	0731309693
	Tarryn Blake	tarrynblake@gmail.com	0722624622
	Chanel Visser	chanelvisser5@gmail.com	0718983635
PhD:	Vernon Solomon	Solomon@ukzn.ac.za	033 2605680
PhD supervisor	Kevin Durrheim	Durrheim@ukzn.ac.za	

Information and Consent for participation in the study: Surveying sensitive behaviours amongst a tertiary student population.

Who we are and what we are doing.

Hello, we are a group of Psychology Honours, Masters and PhD students involved in a study investigating the effect of different questionnaire, survey and interview methods on the rates of disclosure of sensitive behaviours amongst university students. This study is designed to help inform researchers on the best methods for finding out how many people in a population are affected by an issue. This information can be used to improve research on these issues and intervention and prevention programmes to address them.

We want to be able to compare different methods of surveys and interviews to see how well they perform in facilitating participants' disclosures of sensitive matters or what may be considered private issues. We also will be measuring how long participants take in answering the different items on the different types of surveys in order to help understand the differences between survey items and the survey methods.

Invitation to participate and implications of participation

We invite you to participate in this study, which will involve completing either a questionnaire or participating in an interview. We are comparing six different methods for surveying or interviewing research participants on sensitive or private behaviours. If you agree to participate, we will randomly assign you to one of four different computer based questionnaires or one of two different interview techniques. We will be asking you to answer a series of questions that concern matters related to alcohol, drugs and sex.

There are no direct benefits for your participation in this part of the study but as a token of our appreciation for your participation and your time, we will pay you R20.00 for your participation.

Should you decide to participate, you may withdraw at any time without any consequence.

Your questionnaire will be completely anonymous and confidential. We will ask you to complete a section on your demographics, like age and sex. None of your responses will be able to be linked to you personally.

It should take you 15 – 20 minutes or less to complete the questionnaire.

How your data will be used

The data that arises from your participation will be entered into a database and analysed statistically. This will be used to understand which of the different methods of interviewing and surveying participants works best for participants. The data may also be presented at conferences or be published. The data will also be written up as part of a series of Honours, Masters and PhD dissertations by all the participating researchers.

How you are protected.

It will not be possible to identify personal details of any participant so your participation and your responses will be entirely protected and confidential. This data will be shredded after entry into the database and stored electronically for 5 years after which it will be destroyed. It will not be possible to connect your signed declaration of consent with the data.

You may withdraw at any time without any consequence.

In the unlikely event that participation causes you any personal discomfort or distress, you may contact any of the researchers (listed below) for a referral to the counseling service of your College or to our School's Child and Family Centre. All these contact details are provided below.

If you have complaints or concerns about the study, you may contact the supervisor of the research, Vernon Solomon, (Solomon@ukzn.ac.za), supervisor of Mr. Solomon's PhD, Prof. Kevin Durrheim (durrheim@ukzn.ac.za).

You may also contact the Chairperson of the UKZN Humanities and Social Science Research Ethics Committee through the secretary Ms. P. Ximba (ximbap@ukzn.ac.za), 031 260 3587.

Thank you for your willingness to consider this and for your participation.

Researchers and Contact Details for concerns and questions

Research office: Ms. P. Ximba 031 260 3587

Course	Name	Email	Cell:
Honours:	Alex Bailey	210503919@stu.ukzn.ac.za	0825028735
	Ashleigh De Beer	210525436@stu.ukzn.ac.za	0832611843
Masters:	HafsahShaik	hafsahshaik@yahoo.co.uk	0795924286
	Lauren Fynn	lsfynn@gmail.com	0731309693
	Tarryn Blake	tarrynblake@gmail.com	0722624622
	Chanel Visser	chanelvisser5@gmail.com	0718983635
PhD:	Vernon Solomon	Solomon@ukzn.ac.za	033 2605680
PhD supervisor	Kevin Durrheim	Durrheim@ukzn.ac.za	

Declaration of Consent

I ……………………………………………………………….(full names) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am liberty to withdraw from the project at any time, should I so desire.

……………………………………………………………   …………………

Signature of Participant   Date

Norming Study
Scaling Sensitive items

INSTRUCTIONS: Thank you for participating in this study.

We ask you to complete the following questionnaire. As explained in the information sheet we are interested to know how sensitive you think the items on the list are for you. By **sensitive** we mean that you see it as important that no one should know this about you, *IF it were true*. We ask you to rate each item on a scale according to how much you agree that you wouldn't want anyone to know this about you. Please pretend or assume that all the items are true for you when you do the ratings. **Note:** *We want you pretend the item is **true** for you, however, your responses do not indicate whether it is true or not.* Your responses simply indicate whether you think it would be sensitive IF it were true.

We ask you to rate the items on the following scale:

I regard the following as so sensitive that if it were true about me, I would not want anyone to know about it

(cross a box)

1. True for me	2. Partially true for me	3. Partially NOT true for me	4. Not true at all for me

For | eating pizza   1 | 2 | 3 | 4̸ | example:

Please make sure the option you select best represents your perception of what is sensitive (rather than what you think friends/ others regard as sensitive).

First: Please complete the section on demographics:

Please tick the applicable block:

Age (please write):_____

Gender: Male: ☐☐ **Female:** ☐☐

Year of study at university: 1st ☐☐ **2nd** ☐☐ **3rd** ☐☐ **4th +** ☐☐

What population group/race would you describe yourself as?

Black ☐☐ **Coloured** ☐☐ **Indian** ☐☐ **White** ☐☐ **Other** ☐☐

Norming study

Please **pretend** or assume that **all the items are true for you** when you do the ratings.

I regard the following as so sensitive that **if it were true about me,** I would not want anyone to know about it

1.   True for me 2. Partially true for me   3. Partially NOT true for me   4. Not true at all for me

1	Have had dental work done	1	2	3	4
2	Know where to buy condoms	1	2	3	4
3	Have more than one sibling	1	2	3	4
4	Have a favourite soccer team	1	2	3	4
5	Would consider myself a sports fan	1	2	3	4
6	Think one alcoholic drink a day is healthy	1	2	3	4
7	Have seen a doctor in the last year	1	2	3	4
8	Have been/ am in a sexual relationship in exchange for things I need (e.g. food, transport, accommodation, fees).	1	2	3	4
9	Visit the Library more than once a week	1	2	3	4
10	Have had sexual intercourse with someone who was too intoxicated to give consent.	1	2	3	4
11	Am on Facebook	1	2	3	4
12	Know where to get condoms for free	1	2	3	4
13	Know what's going on in SA politics	1	2	3	4
14	Know where to get the contraceptive pill	1	2	3	4
15	Often have had sex with my boyfriend/girlfriend because I feel that I have to	1	2	3	4
16	Am comfortable with my sexual desires	1	2	3	4
17	Have broken a limb	1	2	3	4
18	Have raped someone	1	2	3	4
19	Use the internet almost every week	1	2	3	4
20	Have hay fever	1	2	3	4
21	Have an ipad or tablet	1	2	3	4
22	Like reading the editorial section of the local newspaper	1	2	3	4
23	Have a shoe size smaller than size 6	1	2	3	4
24	Work to earn money while I am studying full time	1	2	3	4
25	Always read before going to sleep	1	2	3	4
26	Am HIV positive	1	2	3	4
27	Always have sugar in tea or coffee	1	2	3	4
28	Can type reasonably well	1	2	3	4
29	Have gone to a traditional healer when sick	1	2	3	4
30	Have been slightly drunk	1	2	3	4
31	Am concerned about contracting a sexually transmitted disease	1	2	3	4
32	Exercise regularly	1	2	3	4
33	Have engaged in light petting (kissing, fondling)	1	2	3	4
34	Try to eat healthily	1	2	3	4
35	Have taken illegal drugs	1	2	3	4
36	Know the name of a Maritzburg United soccer player	1	2	3	4

37	Have been aware of sexual feelings between 10 and 12 years	1	2	3	4
38	Have engaged in heavy petting **(including genital contact)**	1	2	3	4
39	Have used a condom the last time I had sex	1	2	3	4
40	Know about the "morning after" pill	1	2	3	4

Norming study

Please **pretend** or assume that **all the items are true for you** when you do the ratings

I regard the following as so sensitive that **if it were true about me,** I would not want anyone to know about it

1. True for me 2. Partially true for me   3. Partially NOT true for me   4. Not true at all for me

41	Have gone to the doctor when sick	1	2	3	4
42	Use the contraceptive pill	1	2	3	4
43	Have had more than one sexual partner in the last month	1	2	3	4
44	Know the name of the Kenyan president	1	2	3	4
45	Have raped someone together with one or more of my friends	1	2	3	4
46	Am waiting for the right partner before having sex	1	2	3	4
47	Won't go in a car with a driver who has been drinking	1	2	3	4
48	Sometimes smoke cigarettes	1	2	3	4
49	Have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes).	1	2	3	4
50	Regret the first time I had sex	1	2	3	4
51	Have had a wound that needed stitches	1	2	3	4
52	Have experimented casually with various drugs	1	2	3	4
53	Have asthma	1	2	3	4
54	Am a vegetarian	1	2	3	4
55	Have one or more pets	1	2	3	4
56	Have had sex with a partner who was 10 or more years older than me at the time	1	2	3	4
57	Don't drink alcohol	1	2	3	4
58	Usually choose sugar free soft drinks	1	2	3	4
59	Have travelled outside South Africa	1	2	3	4
60	Use sms's more than email	1	2	3	4
61	First had sex between the ages of 14 and 16	1	2	3	4
62	Had sex when I was emotionally ready	1	2	3	4
63	Had at least one parent who smoked cigarettes	1	2	3	4
64	Am comfortable with casual sex	1	2	3	4
65	Am waiting till marriage to have sex	1	2	3	4
66	Have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, herpes, genital ulcer, *idrop*)	1	2	3	4
67	Drink coffee	1	2	3	4
68	Have been in a car accident as a passenger	1	2	3	4
69	Have taken drugs intravenously (injectable)	1	2	3	4
70	Have sinus problems	1	2	3	4
71	Am careful with my diet	1	2	3	4

72	Have been to London	1	2	3	4
73	Live alone	1	2	3	4
74	Have my driver's license	1	2	3	4
75	Like documentaries	1	2	3	4
76	Went to a government high school	1	2	3	4
77	Have had sex with someone who wasn't my regular partner	1	2	3	4
78	Have a brother	1	2	3	4
79	Think alcohol should be illegal	1	2	3	4
80	Have been tested for HIV	1	2	3	4

Norming study

Please **pretend** or assume that **all the items are true for you** when you do the ratings.

I regard the following as so sensitive that **if it were true about me,** I would not want anyone to know about it

1. True for me 2. Partially true for me   3. Partially NOT true for me   4. Not true at all for me

81	Have gone to the chemist when sick	1	2	3	4
82	Am at risk for HIV	1	2	3	4
83	Support legalising drugs	1	2	3	4
84	Think sex is ok in a committed relationship	1	2	3	4
85	Live in shared accommodation	1	2	3	4
86	Know my HIV status	1	2	3	4
87	Often watch television late at night	1	2	3	4
88	Have often drunk alcohol	1	2	3	4
89	Don't mix with people who drink alcohol	1	2	3	4
90	Would consider myself a fan of pop music	1	2	3	4
91	Have seen a dentist in the last two years	1	2	3	4
92	Smoke cigarettes in social situations	1	2	3	4
93	Have more than one sister	1	2	3	4
94	Had sex when I was younger than 14	1	2	3	4
95	Always use condoms when having sex	1	2	3	4
96	Have watched the movie "Tsotsi"	1	2	3	4
97	Am entitled to have my partner pay for things for me	1	2	3	4
98	Never exercise	1	2	3	4
99	Never drink fizzy drinks	1	2	3	4
100	Own at least one cell phone	1	2	3	4
101	Don't drive when I have been drinking	1	2	3	4
102	Have an internet connection at home	1	2	3	4
103	Watch the news on TV at least 3 times a week	1	2	3	4
104	Reading is a hobby	1	2	3	4
105	Think smoking cigarettes is more harmful than smoking dagga	1	2	3	4
106	Regularly get health check-ups	1	2	3	4
107	Don't normally eat breakfast	1	2	3	4
108	Know what a "conversion" is in rugby	1	2	3	4
109	Have a favourite TV show	1	2	3	4
110	Have a dog as a pet	1	2	3	4
111	Have my own vehicle	1	2	3	4
112	Have seen any kind of health practitioner in the last year	1	2	3	4
113	Can speak more than 2 languages reasonably well	1	2	3	4
114	Have had diagnostic tests done in the last year	1	2	3	4
115	Went to a private high school	1	2	3	4

116	Subscribe to electronic newsletters	**1**	**2**	**3**	**4**
117	Have had sex after drinking	**1**	**2**	**3**	**4**
118	Have not had sex	**1**	**2**	**3**	**4**
119	Have had more than two sexual partners in the last three months	**1**	**2**	**3**	**4**
120	Have gone to a local clinic when sick	**1**	**2**	**3**	**4**

Norming study

Please **pretend** or assume that **all the items are true for you** when you do the ratings.

I regard the following as so sensitive that **if it were true about me,** I would not want anyone to know about it

1.   True for me 2. Partially true for me   3. Partially NOT true for me   4. Not true at all for me

121	Have taken antibiotics in the last year	**1**	**2**	**3**	**4**
122	Take vitamins almost everyday	**1**	**2**	**3**	**4**
123	There's a handgun in my house	**1**	**2**	**3**	**4**
124	Only use condoms with a new partner	**1**	**2**	**3**	**4**
125	Have lived outside of South Africa	**1**	**2**	**3**	**4**
126	Am sexually active	**1**	**2**	**3**	**4**
127	Have refused to use a condom	**1**	**2**	**3**	**4**
128	Have never been in hospital	**1**	**2**	**3**	**4**
129	Have watched the movie "Jerusalema"	**1**	**2**	**3**	**4**
130	Had sex the first time with someone when I did not really feel like doing it	**1**	**2**	**3**	**4**
131	Have had sex with someone who isn't a regular partner because I've needed material things (e.g. rent, food, cosmetics).	**1**	**2**	**3**	**4**
132	Have weekend/after hours work for money	**1**	**2**	**3**	**4**
133	Had asthma as a child	**1**	**2**	**3**	**4**
134	Have felt peer pressure to drink alcohol.	**1**	**2**	**3**	**4**
135	Can drive quite well after two drinks	**1**	**2**	**3**	**4**
136	Regularly post items on Facebook	**1**	**2**	**3**	**4**
137	Have been forced to have sex	**1**	**2**	**3**	**4**
138	Have had to slap, kick or bite to stop someone having sex with me	**1**	**2**	**3**	**4**
139	Have engaged in sexual intercourse while under the influence of alcohol that I later regretted.	**1**	**2**	**3**	**4**
140	Regret having had sex	**1**	**2**	**3**	**4**
141	Have lived in at least three different provinces	**1**	**2**	**3**	**4**
142	Have had unprotected sex while knowing I am HIV positive and/or have a sexually transmitted infection	**1**	**2**	**3**	**4**
143	Don't mix with people who use drugs	**1**	**2**	**3**	**4**
144	Am careful about risky sex	**1**	**2**	**3**	**4**
145	Have a student loan from a bank	**1**	**2**	**3**	**4**
146	Have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.	**1**	**2**	**3**	**4**
147	Am comfortable receiving gifts from my sexual partner	**1**	**2**	**3**	**4**
148	Have been sexually active but not had intercourse (vaginal or anal)	**1**	**2**	**3**	**4**
149	Have been coerced or forced to have sexual intercourse by someone who was under the influence of alcohol.	**1**	**2**	**3**	**4**
150	Am a virgin	**1**	**2**	**3**	**4**
151	Sometimes drink alcohol socially	**1**	**2**	**3**	**4**

152	Have been pressurised to have sex without a condom	1	2	3	4
153	Have been to Durban	1	2	3	4
154	Drink tea	1	2	3	4

Norming study

Please **pretend** or assume that **all the items are true for you** when you do the ratings.

I regard the following as so sensitive that **if it were true about me,** I would not want anyone to know about it

1. True for me 2. Partially true for me   3. Partially NOT true for me   4. Not true at all for me

155	Drink alcohol in moderation	1	2	3	4
156	Have forced someone to have sex with me	1	2	3	4
157	Have had sexual intercourse when so under the influence of alcohol that I was unable to consent.	1	2	3	4
158	Felt ready when I had sex the first time	1	2	3	4
159	Own a laptop computer	1	2	3	4
160	Have had sex with a teacher or lecturer	1	2	3	4
161	Have been in an accident as driver (car/motorcycle/bicycle)	1	2	3	4
162	Have blacked out from drinking too much alcohol	1	2	3	4
163	Smoke dagga occasionally	1	2	3	4
164	Have drunk alcohol	1	2	3	4
165	Have allergies	1	2	3	4
166	Have a shoe size over 7	1	2	3	4
167	Have had sex with someone when I was so drunk that I do not remember it	1	2	3	4
168	Often watch television late at night	1	2	3	4
169	First had sex between the ages of 14 and 18	1	2	3	4
170	Have had sexual intercourse without a condom being used while under the influence of alcohol.	1	2	3	4
171	Know the name of the premier of KwaZulu-Natal	1	2	3	4
172	Have a cat as a pet	1	2	3	4
173	Had the usual childhood illnesses	1	2	3	4
174	Live with my family	1	2	3	4
175	Have been/am in a sexual relationship mainly for material benefits (e.g. gifts, food, clothes).	1	2	3	4
176	Am careful about what I put into my body	1	2	3	4
177	Have had sex with someone who was in an authority position in relation to me	1	2	3	4
178	Use the internet from my cellphone	1	2	3	4
179	Have watched the movie "Argo"	1	2	3	4
180	Have consumed alcohol until intoxicated/drunk	1	2	3	4
181	Dagga is not harmful	1	2	3	4
182	Read the local paper almost everyday	1	2	3	4
183	Became aware of sexual feelings from 13 years onwards	1	2	3	4
184	Have read the book "Lord of the files"	1	2	3	4
185	Have coerced or forced someone who was under the influence of alcohol to have sexual intercourse with me.	1	2	3	4
186	Look after my body	1	2	3	4

APPENDIX E - FACTOR ANALYSIS NORMING STUDY

	Component	
	1	2
Have gone to the chemist when sick	.662	
Use the internet from my cellphone	.655	
Have been to Durban	.649	
Own at least one cell phone	.641	
Own a laptop computer	.636	
Drink tea	.635	
Watch the news on TV at least 3 times a week	.625	
Have seen any kind of health practitioner in the last year	.623	
Often watch television late at night	.619	
Drink coffee	.615	
Had the usual childhood illnesses	.610	
Can type reasonably well	.605	
Often watch television late at night	.604	
Have watched the movie "Tsotsi"	.601	
Can speak more than 2 languages reasonably well	.599	
Have an internet connection at home	.597	
Don't normally eat breakfast	.595	
Have allergies	.592	
Have gone to the doctor when sick	.591	
Reading is a hobby	.587	
Know my HIV status	.584	
Drink alcohol in moderation	.584	
Know the name of the premier of KwaZulu-Natal	.572	

Am on Facebook	.567
Don't drive when I have been drinking	.563
Use the internet almost every week	.563
Went to a private high school	.562
Know what a "conversion" is in rugby	.561
Subscribe to electronic newsletters	.560
Have taken antibiotics in the last year	.559
Live with my family	.558
Have a favourite soccer team	.558
Think sex is ok in a committed relationship	.556
Have my own vehicle	.556
Like documentaries	.555
Know about the "morning after" pill	.555
Have a dog as a pet	.548
Never drink fizzy drinks	.546
Am careful about what I put into my body	.546
Would consider myself a sports fan	.534
Always have sugar in tea or coffee	.532
Have seen a dentist in the last two years	.531
Live in shared accommodation	.530
Have my driver's license	.514
Can drive quite well after two drinks	.513
Have a brother	.512
Work to earn money while I am studying full time	.512
Have seen a doctor in the last year	.511
Have had dental work done	.510
Had asthma as a child	.510
Would consider myself a fan of pop music	.504

Have had diagnostic tests done in the last year	.501
Think smoking cigarettes is more harmful than smoking dagga	.500
Try to eat healthily	.500
Have a favourite TV show	.497
Have been tested for HIV	.487
Have sinus problems	.486
Read the local paper almost everyday	.485
Have gone to a local clinic when sick	.483
Like reading the editorial section of the local newspaper	.481
Have a shoe size over 7	.480
Went to a government high school	.480
Am careful with my diet	.479
Have often drunk alcohol	.474
Sometimes drink alcohol socially	.474
Have hay fever	.473
Have been slightly drunk	.468
Have been in a car accident as a passenger	.468
Know the name of a Maritzburg United soccer player	.466
Know where to get condoms for free	.465
Have more than one sister	.462
Have been in an accident as driver (car/motorcycle/bicycle)	.459
Use sms's more than email	.457
Always read before going to sleep	.452
Have engaged in light petting (kissing, fondling)	.448
Know where to get the contraceptive pill	.446
Have watched the movie "Argo"	.445

Have asthma	.438
Have watched the movie "Jerusalema"	.438
Am careful about risky sex	.437
Take vitamins almost everyday	.433
Have used a condom the last time I had sex	.431
Have read the book "Lord of the files"	.431
Live alone	.430
Don't mix with people who use drugs	.429
Regularly post items on Facebook	.429
Have been to London	.428
Have felt peer pressure to drink alcohol.	.422
Always use condoms when having sex	.411
Have drunk alcohol	.408
Have one or more pets	.407
Regularly get health check-ups	
Have a student loan from a bank	
Have broken a limb	
Felt ready when I had sex the first time	
Have weekend/after hours work for money	
Visit the Library more than once a week	
Have never been in hospital	
Know where to buy condoms	
Have lived in at least three different provinces	
Am a vegetarian	
Am comfortable receiving gifts from my sexual partner	
Had at least one parent who smoked cigarettes	
Never exercise	
Don't mix with people who drink alcohol	

Am sexually active		
Won't go in a car with a driver who has been drinking		
Usually choose sugar free soft drinks		
Have travelled outside South Africa		
Have had a wound that needed stitches		
Am comfortable with my sexual desires		
Have an ipad or tablet		
Became aware of sexual feelings from 13 years onwards		
Have consumed alcohol until intoxicated/drunk		
Am concerned about contracting a sexually transmitted disease		
Have lived outside of South Africa		
Have a cat as a pet		
Think one alcoholic drink a day is healthy		
Am waiting till marriage to have sex		
Know the name of the Kenyan president		
Am waiting for the right partner before having sex		
Look after my body	.411	-.417
Exercise regularly		-.404
Am at risk for HIV		
Know what's going on in SA politics		
Have more than one sibling		
Am comfortable with casual sex		
Sometimes smoke cigarettes		
Have been aware of sexual feelings between 10 and 12 years		
Support legalising drugs		
Smoke cigarettes in social situations		

Have not had sex			
Have had sex with someone who wasn't my regular partner			
Am a virgin			
Have blacked out from drinking too much alcohol			
First had sex between the ages of 14 and 18			
Dagga is not harmful			
Have had sex after drinking			
Don't drink alcohol			
Have taken illegal drugs			
Am entitled to have my partner pay for things for me			
Often have had sex with my boyfriend/girlfriend because I feel that I have to			
Have a shoe size smaller than size 6			
Have engaged in heavy petting (including genital contact)			
Have gone to a traditional healer when sick			
Regret the first time I had sex			
Had sex when I was emotionally ready			
Think alcohol should be illegal			
There's a handgun in my house			
Regret having had sex	.645		
Have forced someone to have sex with me	.772		
Have been forced to have sex	.713		
Have raped someone	.658		
Have raped someone together with one or more of my friends	.651		
Have had to slap, kick or bite to stop someone having sex with me	.649		
Had sex the first time with someone when I did not	.465		

really feel like doing it		
Have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.	.745	
Have coerced or forced someone who was under the influence of alcohol to have sexual intercourse with me.	.640	
Have been coerced or forced to have sexual intercourse by someone who was under the influence of alcohol.	.518	
Have taken drugs intravenously (injectable)	.666	
Smoke dagga occasionally	.585	
Have experimented casually with various drugs	.513	
Have had more than two sexual partners in the last three months	.633	
Have had more than one sexual partner in the last month	.462	
Have been sexually active but not had intercourse (vaginal or anal)	.630	
Have had sex with a partner who was 10 or more years older than me at the time	.657	
Have had sex with a teacher or lecturer	.651	
Have had sex with someone who was in an authority position in relation to me	.640	
First had sex between the ages of 14 and 16	.507	
Had sex when I was younger than 14	.466	
Have refused to use a condom	.641	
Have been pressurised to have sex without a condom	.462	
Only use condoms with a new partner	.445	
Use the contraceptive pill	.435	
Have had sex with someone when I was so drunk that I do not remember it	.773	
Have engaged in sexual intercourse while under the influence of alcohol that I later regretted.	.746	

Have had sexual intercourse without a condom being used while under the influence of alcohol.		.688
Have had sexual intercourse when so under the influence of alcohol that I was unable to consent.		.761
Have had sexual intercourse with someone who was too intoxicated to give consent.		.631
Have had unprotected sex while knowing I am HIV positive and/or have a sexually transmitted infection		.702
Have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, herpes, genital ulcer, idrop)		.659
Am HIV positive		.519
Have had sex with someone who isn't a regular partner because I've needed material things (e.g. rent, food, cosmetics).		.718
Have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes).		.693
Have been/am in a sexual relationship mainly for material benefits (e.g. gifts, food, clothes).		.693
Have been/ am in a sexual relationship in exchange for things I need (e.g. food, transport, accommodation, fees).		.564

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

    a. Rotation converged in 3 iterations.

Sensitive items in Domains

A) *sex/intoxication*

    1. I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted.

    2. I have had sex with someone when I was so drunk that I do not remember it.

    3. I have had sexual intercourse when so under the influence of alcohol that I was unable to consent.

4. I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol.

B) *relationship,*

1. I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes).

2. I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics).

3. I have had more than two sexual partners in the last three months.

4. I have had sex with a partner who was 10 or more years older than me at the time.

5. I have had sex with a teacher or lecturer.

C) *STD/HIV,*

1. I am HIV positive.

2. I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).

3. I have refused to use a condom.

4. I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection.

5. I regret having had sex.

D) *coercion sex*

1. I have raped someone.

2. I have raped someone together with one or more of my friends.

3. I have been forced to have sex

4. I have forced someone to have sex with me.

5. I have had to slap, kick or bite someone to stop them from having sex with me.

6. I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.

Non-sensitive and non-related

1. I use the internet from my cell phone.
2. I went to a private high school.
3. I am on Facebook.

4.   I can speak more than 2 languages reasonably well.

5.   I can type reasonably well.

6.   I don't normally eat breakfast.

7.   I drink coffee.

8.   I drink tea.

9.   I have an internet connection at home.

10.   I know what a "conversion" is in rugby.

11.   I have been to Durban.

12.   I subscribe to electronic newsletters.

13.   I live with my family.

14.   I know the name of the premier of KwaZulu-Natal.

15.   I have watched the movie "Tsotsi".

16.   I take vitamins almost everyday.

17.   I often watch television late at night. I watch the news on TV at least 3 times a week.

18.   I use the internet almost every week.

19.   I own a laptop computer

20.   I own at least one cell phone.

21.   Reading is a hobby for me.

22.   I don't drive when I have been drinking.

23.   I have had the usual childhood illnesses.

24.   I have allergies.

25.   I am at risk for HIV.

26.   I am careful with my diet.

Non-sensitive but related

1. Have often drunk alcohol

2. Sometimes drink alcohol socially

3. Drink alcohol in moderation

4. Have been slightly drunk

5. Have felt peer pressure to drink alcohol

6. Have engaged in light petting (kissing, fondling)

7. Know where to get condoms for free

8. Think sex is ok in a committed relationship

9. Am careful about risky sex

10. Have used a condom the last time I had sex

11. Always use condoms when having sex

12. Have drunk alcohol

13. Have had diagnostic tests done in the last year

14. Know about the 'morning after" pill

15. Have been tested for HIV

16. Know my HIV status

17. Can drive quite well after two drinks

18. I have gone to a local clinic when sick.

19. I have gone to the chemist when sick.

20. I have gone to the doctor when sick.

21. I have seen a doctor in the last year.

22. I have seen any kind of health practitioner in the last year

23. I have taken antibiotics in the last year.

24. I know where to get the contraceptive pill.

25. I sometimes drink alcohol socially.

APPENDIX F – QUESTIONNAIRE FORMATS

Experience of participation questionnaire

First: Please complete the section on demographics:

Please cross applicable

<u>**Age**</u> **(please write):**_____

<u>**Gender:**</u> **Male ☐   Female ☐**

<u>**Year of study at university:**</u> **1ˢᵗ ☐ 2ⁿᵈ ☐ 3ʳᵈ ☐ 4ᵗʰ ☐**

<u>**What population group/race would you describe yourself as?**</u>

Black ☐ Coloured ☐ Indian ☐ White ☐ Other ☐

<u>**Where is your place of residence whilst at university?**</u>

University Residence

Digs (accommodation off campus with friends)

Live on my own

Live at home with family/relatives

Other: _____

<u>**How are your studies being paid for?**</u> **(tick more than one if applicable)**

Self-funded (savings/working)	**Loan**
Parents/relatives	**Financial Aid**
Bursary/scholarship	**Other: _____**

Thinking about your experience of responding to the items in this survey, please rate your experience using the scale below.

	1. Strongly Agree	2. Agree	3. Undecided	4. Disagree	5. Strongly Disagree
I am confident that my responses were anonymous					
I am confident that my responses will be kept confidential					
I was comfortable responding to the questions in this format					
I felt uncomfortable answering the questions in this way					
I trusted this process and felt my responses were protected					
There is no way that my responses could be linked to me as a person					
I felt uncomfortable disclosing sensitive information about myself					
I was comfortable enough to tell the truth					
I was able to tell the truth and not worry about it being identified with me					

Social desirability scale

Finally please rate the following statements about yourself in terms of how much each is true of you.

		1. Definitely true	2, Mostly true	3. Don't know	4. Mostly false	5. Definitely false
1	I am always polite, even to people who are unpleasant					
2	There have been occasions when I took advantage of someone					
3	I sometimes try to get even with people rather than to forgive and forget					
4	I sometimes feel resentful when I don't get my way					
5	No matter who I'm talking to, I'm always a good listener					

Unmatched Count Technique

The sensitive items were placed in Sets 1 and 2 of Form A and B respectively. Participants will be randomly placed to respond to either Form A, B, C or D. Form C and D were reordered Form A and B respectively. The innocuous unrelated items, as well as the particular sensitive item (from a domain of sensitivity) was randomly determined after the norming study has taken place.

FORM A	FORM B
Set 1:	**Set 1:**
- Innocuous unrelated item	- Innocuous unrelated item

- Innocuous unrelated item	- Innocuous unrelated item
- Innocuous unrelated item	- Innocuous unrelated item
- Innocuous unrelated item	- Sensitive item
- Innocuous unrelated item	- Innocuous unrelated item
Set 2:	- Innocuous unrelated item
- Innocuous unrelated item	**Set 2:**
- Innocuous unrelated item	- Innocuous unrelated item
- Innocuous unrelated item	- Innocuous unrelated item
- Sensitive item	- Innocuous unrelated item
- Innocuous unrelated item	- Innocuous unrelated item
- Innocuous unrelated item	- Innocuous unrelated item

APPENDIX G - RESULTS

Norming study - Items Endorsements by Gender

	Gender			
Am HIV positive	Male	Female	Unclassified	Significant difference
Positively Indicated	33	84	1	.019 *
Negatively Indicated	71	103	8	
Have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, herpes, genital ulcer, idrop)	Male	Female	Unclassified	Significant difference
Positively Indicated	35	90	3	.035 *
Negatively Indicated	72	98	6	
Have refused to use a condom	Male	Female	Unclassified	Significant difference
Positively Indicated	31	82	3	.052
Negatively Indicated	103	73	5	
Have had unprotected sex while knowing I am HIV positive and/or have a sexually transmitted infection	Male	Female	Unclassified	Significant difference
Positively Indicated	34	94	6	.006 *
Negatively Indicated	66	91	2	
Regret having had sex	Male	Female	Unclassified	Significant difference
Positively Indicated	37	92	3	.104
Negatively Indicated	64	94	5	
Have had sex with someone who isn't a regular partner because I've needed material things (e.g. rent, food, cosmetics).	Male	Female	Unclassified	Significant difference
Positively Indicated	40	86	5	.334
Negatively	61	101	3	

	Indicated				
Have been/am in a sexual relationship mainly for material benefits (e.g. gifts, food, clothes).		Male	Female	Unclassified	Significant difference
	Positively Indicated	33	84	4	.070
	Negatively Indicated	72	102	5	
Have had sex with a partner who was 10 or more years older than me at the time		Male	Female	Unclassified	Significant difference
	Positively Indicated	34	82	5	.084
	Negatively Indicated	73	106	4	
Have had sex with a teacher or lecturer		Male	Female	Unclassified	Significant difference
	Positively Indicated	33	92	3	.010 *
	Negatively Indicated	72	94	6	
Have engaged in sexual intercourse while under the influence of alcohol that I later regretted.		Male	Female	Unclassified	Significant difference
	Positively Indicated	39	78	3	.874
	Negatively Indicated	61	108	5	
Have had sex with someone when I was so drunk that I do not remember it		Male	Female	Unclassified	Significant difference
	Positively Indicated	38	83	3	.331
	Negatively Indicated	67	103	6	
Have had sexual intercourse when so under the influence of alcohol that I was unable to consent.		Male	Female	Unclassified	Significant difference
	Positively Indicated	37	91	4	.090
	Negatively Indicated	67	95	5	
Have had sexual intercourse without a condom being used while under the		Male	Female	Unclassified	Significant difference

influence of alcohol.				
	Positively Indicated	50	102	5	.533
	Negatively Indicated	54	84	4	

Have raped someone	Male	Female	Unclassified	Significant difference
Positively Indicated	36	78	2	.300
Negatively Indicated	69	111	7	

Have raped someone together with one or more of my friends	Male	Female	Unclassified	Significant difference
Positively Indicated	30	79	4	.035 *
Negatively Indicated	78	108	4	

Have forced someone to have sex with me	Male	Female	Unclassified	Significant difference
Positively Indicated	43	101	2	.025 *
Negatively Indicated	101	85	7	

Have been forced to have sex	Male	Female	Unclassified	Significant difference
Positively Indicated	31	83	4	.073
Negatively Indicated	68	102	4	

Have had to slap, kick or bite to stop someone having sex with me	Male	Female	Unclassified	Significant difference
Positively Indicated	21	91	4	.000 *
Negatively Indicated	79	95	4	

Have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.	Male	Female	Unclassified	Significant difference
Positively Indicated	42	77	4	.889
Negatively Indicated	59	109	4	

Have had more than two sexual partners in the last three months		Male	Female	Unclassified	Significant difference
	Positively Indicated	27	100	2	.000 *
	Negatively Indicated	73	88	7	

Norming study - Items Endorsements by Race

		Race						
		Unclassified	Black	Coloured	Indian	White	Other	Significant difference
Am HIV positive	Positively Indicated	1	72	4	26	15	0	.007
	Negatively Indicated	7	115	17	36	6	1	
Have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, herpes, genital ulcer, idrop)	Positively Indicated	3	80	7	26	12	0	.637
	Negatively Indicated	5	111	14	36	9	1	
Have refused to use a condom	Positively Indicated	3	71	9	21	12	0	.520
	Negatively Indicated	4	116	12	39	9	1	
Have had unprotected	Positively Indicated	6	82	10	23	13	0	.118

sex while knowing I am HIV positive and/or have a sexually transmitted infection	Negatively Indicated	1	102	11	36	8	1	
Regret having had sex	Positively Indicated	3	90	7	21	11	0	.371
	Negatively Indicated	4	96	13	39	10	1	
Have had sex with someone who isn't a regular partner because I've needed material things (e.g. rent, food, cosmetics).	Positively Indicated	4	78	11	24	13	1	.327
	Negatively Indicated	3	108	10	36	8	0	
Have been/am in a sexual relationship mainly for material benefits (e.g. gifts, food, clothes).	Positively Indicated	4	72	9	23	13	0	.344
	Negatively Indicated	4	115	12	39	8	1	
Have had sex with a partner who was 10 or more years older than me at the time	Positively Indicated	5	74	11	22	9	0	.490
	Negatively Indicated	3	117	10	40	12	1	

Have had sex with a teacher or lecturer	Positively Indicated	3	75	11	27	12	0	.555
	Negatively Indicated	5	112	10	35	9	1	
Have engaged in sexual intercourse while under the influence of alcohol that I later regretted.	Positively Indicated	2	75	6	25	11	1	.544
	Negatively Indicated	5	110	14	35	10	0	
Have had sex with someone when I was so drunk that I do not remember it	Positively Indicated	3	75	11	21	14	0	.113
	Negatively Indicated	5	112	10	41	7	1	
Have had sexual intercourse when so under the influence of alcohol that I was unable to consent.	Positively Indicated	4	80	12	25	11	0	.641
	Negatively Indicated	4	106	9	37	10	1	
Have had sexual intercourse without a condom being used while under the influence of alcohol.	Positively Indicated	5	92	13	30	17	0	.073
	Negatively Indicated	3	94	8	32	4	1	

Have raped someone	Positively Indicated	2	67	7	27	13	0	.164
	Negatively Indicated	6	123	14	35	8	1	
Have raped someone together with one or more of my friends	Positively Indicated	3	64	11	24	10	1	.240
	Negatively Indicated	4	128	9	38	11	0	
Have forced someone to have sex with me	Positively Indicated	2	89	12	31	12	0	.538
	Negatively Indicated	6	98	9	31	9	1	
Have been forced to have sex	Positively Indicated	3	69	9	25	11	1	.622
	Negatively Indicated	4	114	11	35	10	0	
Have had to slap, kick or bite to stop someone having sex with me	Positively Indicated	4	74	6	19	13	0	.126
	Negatively Indicated	3	110	15	41	8	1	
Have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.	Positively Indicated	3	73	8	25	13	1	.366
	Negatively Indicated	4	112	13	35	8	0	
Have had more than	Positively Indicated	2	81	11	23	12	0	.441

two sexual partners in the last three months	Negatively Indicated	6	105	10	37	9	1

Experience of participation results

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
I am confident that my responses were anonymous	.568	2	407	.567
I am confident that my responses will be kept confidential	1.391	2	407	.250
I was comfortable responding to the questions in this format	.297	2	407	.743
I felt uncomfortable answering the questions in this way	7.384	2	407	.001
I trusted this process and felt my responses were protected	.045	2	407	.956
There is no way that my responses could be linked to me as a person	2.440	2	407	.088
I felt uncomfortable disclosing sensitive information about myself	2.638	2	407	.073
I was comfortable enough to tell the truth	1.381	2	407	.252

I was able to tell the truth and not worry about it being identified with me	3.863	2	407	.022	

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
I am confident that my responses were anonymous	Between Groups	.242	2	.121	.262	.770
	Within Groups	188.014	407	.462		
	Total	188.256	409			
I am confident that my responses will be kept confidential	Between Groups	.127	2	.063	.155	.856
	Within Groups	166.130	407	.408		
	Total	166.256	409			
I was comfortable responding to the questions in this format	Between Groups	.680	2	.340	.563	.570
	Within Groups	245.818	407	.604		
	Total	246.498	409			
I felt uncomfortable answering the questions in this way	Between Groups	11.700	2	5.850	2.853	.059
	Within Groups	834.700	407	2.051		

	Total	846.400	409			
I trusted this process and felt my responses were protected	Between Groups	.054	2	.027	.046	.955
	Within Groups	239.507	407	.588		
	Total	239.561	409			
There is no way that my responses could be linked to me as a person	Between Groups	7.485	2	3.743	3.492	.031
	Within Groups	436.212	407	1.072		
	Total	443.698	409			
I felt uncomfortable disclosing sensitive information about myself	Between Groups	16.252	2	8.126	4.556	.011
	Within Groups	726.004	407	1.784		
	Total	742.256	409			
I was comfortable enough to tell the truth	Between Groups	.405	2	.202	.374	.688
	Within Groups	219.898	407	.540		
	Total	220.302	409			
I was able to tell the truth and not worry about it being identified with me	Between Groups	1.760	2	.880	1.360	.258
	Within Groups	263.365	407	.647		

Total	265.124	409			