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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 I and Type II, among University of KwaZulu-Natal students.

Masters in Psychology

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Abstract

This research aimed to compare four survey modes of delivery, the Audio Computer Assisted Self Interview (ACASI), the Self-Report Questionnaire (SRQ) and the Unmatched Count Techniques (UCT) Type I and Type II, when researching sensitive topics pertaining to risky behaviours. The focus of this research was on the domains of risky sexual behaviour and intoxication amongst male and female students at the University of KwaZulu-Natal. This study included a norming study which was used to scale the levels of sensitivity of a range of behaviours in the above mentioned domains for this population. A quantitative experimental survey design was then used to compare the effectiveness of the Audio Computer Assisted Self Interview, the Self-Report Questionnaire and the Unmatched Count Techniques Type I and Type II in terms of their ability to elicit honest answers when dealing with the sensitive topics of risky sexual behaviours and intoxication. Each questionnaire also contained an experience of participation section, in order to gain insight on the participants perception of the survey modes of delivery used, as well a social desirability scale. A convenience sample of male and female university students at the University of KwaZulu-Natal was used in this study. This study found significant differences in terms of the rates of disclosure, particularly in terms of the UCT Type II. This study found no significant differences in terms of the base rate estimates for social desirability and experience of participation across all the methods.

Contents

Chapter 1

1. Introduction

The trustworthiness of data obtained on self-reported sensitive behaviour has been questioned and is a general problem for social science, medical and public health research. Risky sexual behaviour is perceived as sensitive and is linked to the spread of HIV/AIDS, sexually transmitted infections and teenage or unwanted pregnancies. Obtaining information that is valid and reliable on risky behaviour is of extreme importance for public health programmes, prevention and intervention and monitoring and evaluation of health interventions. Data obtained on self-report sexual behaviour can be used for monitoring the spread of HIV, STI's and teenage pregnancies, as well as recognizing populations at risk and assessing the effectiveness of risk-reduction interventions.

In-depth research on assessment of sensitive behaviours is essential, so as to confidently make decisions about the best interventions for various purposes. The validity and reliability of self-reports may be compromised for a host of reasons including recall, researcher effects, respondent variables and variables associated with the self-report instruments. Some behaviours are deemed so sensitive that respondents may not want to report them. In addition, participants may deliberately underreport or over-report some health-risk behaviours. Behaviours that are believed to be socially undesirable may be underreported and behaviours that are believed to be socially desirable may be over-reported. Over-reporting leads to biased results and inflates the association between individuals and the behaviour under investigation.

A number of measurement concerns which may affect the reliability and validity of a measure affect self-reports. These measurement concerns range from a participant's literacy level and comprehension of the behaviour in question, to recall biases and self-presentation or confidentiality concerns resulting from stigmatization of the behaviour in question. In an attempt to obtain valid and reliable data on risky behaviours, researchers such as Chaudhuri and Christofides 2007, Coutts and Jann, 2009, Dalton et al., 1994, Gregson et al., 2004, LaBrie and Earleywine, 2000, Langhaug et al., 2007, Langhaug, Sherr & Cowan, 2010 and Van der Elst et al.,

2008 have investigated survey modes of delivery and have employed a diversity of techniques. These techniques include; the Face-To-Face Interview (FTFI) (Gregson et al. 2004), the Random Response Technique (RRT) (Coutts and Jann, 2009), the Unmatched Count Technique (UCT) (Dalton et al. 1994), the Self-Report Questionnaire (SRQ) (Korb, 2011), the Informal Confidential Voting Interview (ICVI) (Gregson et al. 2004) and the Audio Computer Assisted Self-Interview (ACASI) (Ghanem et al. 2005), all of which can be used to research sensitive issues.

Other measures include assessing word order, phrasing of questions, controlling for researcher variables, as well as ensuring confidentiality. In an attempt to address the issues experienced by researchers in obtaining valid responses to sensitive information, this research project made use of a norming study, which attempted to gain an insight into university student's perceptions regarding sensitive behaviours, ranging from risky sexual behaviour to sex under intoxication. A comparative investigation of the ability of various modes for surveying sensitive behaviours was then undertaken, with a secondary focus on the students' perceptions of the efficiency of the methods in obtaining data on risky behaviours. This research also aimed to discover which mode of survey evidenced the lowest rates of social desirability bias by making use of the Hays, Hayashi and Stewart (1989) five item social desirability scale.

This study made use of the ACASI, the SRQ, and the UCT Type I and Type II as a means of obtaining valid and reliable responses to questions on risky behaviours. The UCT Type II is a variation of the UCT Type I in terms of having innocuous items that are related to the sensitive behaviour in question (Chaudhuri & Christofides, 2007). Sensitive behaviours, which included behaviours related to risky sexual behaviour and sex under intoxication, were of interest to us as they contribute to the HIV/AIDS rate in South Africa and pose serious health risks.

This research also investigated the problem of reliability and validity with regards to the self-report of sensitive issues, where reliability and validity of the above mentioned techniques was assessed in accordance with the amount of disclosure they generated in terms of sensitive issues. This is important as it is argued (Dalton, Wimbush & Daily, 1994; La Brie & Earleywine, 2000) that the greater the amount of

disclosure the more validity studies using these techniques will possess. This research makes use of the proportions of disclosure as an analogue of validity, as external validity for private, sensitive and otherwise risky behaviours which form a part of this study are difficult to obtain. However, rate of disclosure can also be an imperfect criterion for validity due to biases that may be attached to the responses, especially in terms of over-reporting of behaviours. Therefore, including a measure such as the Hays, Hayashi and Stewart, (1989) five item social desirability scale might be beneficial in terms of dealing with biases that might be present. Acknowledging and attempting to address these concerns is crucial for health and psychological research in terms of planning public health interventions and programs that are effective. This study formed part of an overarching larger programme of related studies, which compared the various research methods; among them were the ACASI, UCT Types I and II, the SRQ, ICVI and the FTFI.

Chapter 2

2. Literature Review

This literature review looked at the domains of risky behaviours, where risky behaviours that were of concern in this research were also perceived as sensitive. This research also went on to look at the problems experienced with the self-report of risky and otherwise sensitive behaviours. These problems include problems experienced in terms of the validity and reliability of the self-reports obtained from participants. Where validity and reliability in this research are assessed in accordance with the accuracy of the reports and the amount of disclosure obtained. This research further went on to review the techniques available for researching sensitive and otherwise risky behaviours and reviewing the efficiency of each method independently.

2.1 Sensitive Behaviours

Taking risks is part of life however; people differ in terms of the kind of risks that they take. Some people tend to enjoy risky pursuits while others dislike such activities (Szrek, Chao, Ramlagan & Peltzer, 2012). The traditional domains of risky behaviour among individuals include tobacco, drugs, alcohol and sexual behaviour that may lead to unwanted pregnancy or sexually transmitted diseases (STD). Research has

shown that individuals with one problem behaviour, such as smoking tend to engage in other risk-taking behaviours, such as high-risk sexual behaviour, drinking and/or violence (Kalichman, Kelly & Stevenson, 1997).

Research by Mutinta and Govender, (2012) found that engaging in behaviour such as sexual activity, drug and/or alcohol consumption are an indication of young people's desire to assert their maturity and entry into adulthood. Therefore, when a risky behaviour occurs at an age appropriate time and within the ordered situation of a protective environment, it may be considered as normal and developmentally adaptive for that particular society in question (Mutinta & Govender, 2012). In keeping with the literature explored above, this research was focused on the domains of risky sexual behaviour, which include unprotected sex, multiple sexual partners, transactional sex, forced or coerced sex and the use of drugs and/or alcohol which results in intoxication and leads to risky sexual intercourse.

These are relevant behaviours for investigation, as the population used in this study are university students, who are mostly between the ages of 18-24 and numerous studies have found significant links amongst this particular age group between the use of drugs and/or alcohol and risky sexual practices. Recent work suggests that individuals engage in the most extensive identity exploration during emerging adulthood, which is the period from approximately 18-25 years of age rather than early adolescence (Roberts & Kennedy, 2006). For individuals attending residential universities, this period of exploration may be increased by the experiences of living away from home for the first time and living in an environment surrounded by many social, political, religious and interest related activities (Roberts & Kennedy, 2006). In the following two section, namely section 2.1.1 and 2.1.2 the domains of risky sexual behaviour and practices will be reviewed as well as sex under intoxication.

2.1.1 Sexual Behaviour and Practices

The domains of risky sexual behaviour are vast and include many sexual practices that have various consequences attached to them, such as unplanned pregnancies, STD's and or HIV/ AIDS. These risky sexual behaviours also include unprotected sexual intercourse that is, without a condom, without contraception, with someone

they have just met and/or otherwise unintended (Uchudi, Magadi & Mostazir, 2010). Risky sexual behaviour also includes sex occurring at an age earlier than 16 years of age and or having multiple sex partners. Transactional sex, which is sex in exchange for goods, money, gifts, as well as coercive sex, which exists along a continuum of behaviours, from unwanted touching, to sex that may not be perceived as forced but is nonetheless unwanted, to threats, intimidation and rape, are also factors of risky sexual behaviour (Uchudi, Magadi & Mostazir, 2010).

Unsafe sex has been ranked as the second highest risk factor for harm in high mortality developing countries, accounting for 10.2% of the global burden of disease (Szrek, Chao, Ramlagan & Peltzer, 2012). In South Africa, casual sex, multiple concurrent partners and irregular condom use are known to be common sexual risk practices among adolescents and youth. In addition sexual debut was found to be significantly earlier, starting from less than 14 years of age, in 15.6% of black, 12.0% of coloured and 6.4% of white groups (Simbayi, Chauveau & Shisana, 2004). Sexually transmitted infections (STIs) acquired through unsafe sexual practices, which are also associated with increased risk of acquiring HIV and with increased infection of an individual to sexual partners, was present in 1.2% white, 3.2% coloured and 7.7% black learners who have had sex, reported having had an STI (Reddy et al. 2003).

Risky sex can increase the likelihood of teenage pregnancy, as well as sexually transmitted infections including HIV and cause young people a range of adverse emotional, social and economic consequences. Forced sex has been associated with decreased condom usage, increased reporting of STI symptoms and unintended pregnancy. Sexual coercion and domestic violence generally are increasingly understood to be linked to poor reproductive health outcomes (Simbayi, Chauveau, & Shisana, 2004). Research by Lyndon, White and Kadlec, (2007) has suggested that some verbally coerced sex may not even be perceived as sexual victimization by victims of this type of abuse and since many women are more likely to be verbally pressured, or in some way manipulated, rather than physically forced into unwanted sexual activity this form of victimisation may be grossly under-reported and under-estimated.

Risky sexual behaviours such as those reviewed above are relatively common among adolescents and youth in South Africa. They increase the risk of unplanned pregnancies and contracting of sexually transmitted infections (STIs), in particular HIV/AIDS (Simbayi, Chauveau, & Shisana, 2004). Among South African adolescents, 16.4% have made someone pregnant or have themselves been pregnant and 8.1% have undergone an abortion or had a partner who did (Reddy et al. 2003). There is an escalation of teenage pregnancies and sexual experimentation outside marriage, which continues in spite of anestablished STI/HIV status and in spite of awareness about precautionary methods, condom usage is still quite restricted (Szrek et al. 2012).

2.1.2 Sex under intoxication

Harms associated with alcohol use and risky sexual behaviour can be intensified by combining the two problematic behaviours. The global burden of disease in terms of alcohol and unsafe sex is significant (Kalichman et al. 2007). Alcohol, unsafe sexual behaviour, whether unintentional or intentional, unprotected sexual contact and the spread of sexually transmitted infections (STIs), together with HIV infection have resulted in individual contributions which affect the global burden of disease (Simons, Maisto & Wray, 2010).

It has been found that more than 40 million people in the world are infected with HIV. Out of this 40 million, two out of three of these people live in sub-Saharan Africa and nearly one in five South African adults are found to be living with HIV/AIDS (Hoffman, Klein, Eber & Crosby, 2000). Apart from having one of the world's worst HIV/AIDS epidemics, South Africa consumes among the most alcohol per capita globally. Globally alcohol use is linked with risks for sexually transmitted infections (STI) including HIV/AIDS and South Africa is no different (Kalichman, Simbayi, Cain & Jooste, 2008).

According to Morojele, Brook and Kachienga (2006), cognitive factors, including expectations of drinking alcohol, have revealed significant effects on sexual risk behaviours in South Africa. These expectations include the belief that alcohol will intensify sexual desire and sexual pleasure and are linked to HIV risk behaviours. In

addition, sexual improvement expectations, such as alcohol will intensify sexual desire and sexual pleasure; have been linked to an increased number of sex partners that regret having had sex (Morojele et al. 2006). There are also findings which support gender differences in terms of how alcohol beliefs are related to sexual risk behaviour. Teenagers and women are generally prone to consuming an increased amount of alcohol .In terms of sexual activities and alcohol usage; men tend to have more social liberties than women. Moreover for men, alcohol is frequently used for purposes of disinhibiting sexual activity, as a sex facilitator, a sign of masculinity, and a means of relaxation, recreation, socializing and improving communication skills (Simons et al. 2010). Alcoholic beverages are also used as a facilitator in approaching the opposite sex, as masculinity is often linked to the ability to have multiple partners, drink alcohol and engage in promiscuous behaviour (Kalichman et al. 2008).

Alcohol usage is linked with certain kinds of sexual activity. Alcohol usage and sexual risk behaviours are widespread in places such as nightclubs, bars and brothels (Kalichman et al. 2007). Sexual risk behaviour has been linked to a large amount of HIV infections and alcohol usage has been shown to increase high-risk sexual behaviour (Szrek et al. 2012). Alcohol usage is linked to a significant amount of diseases and deaths. Literature also shows that the age for initiating sexual activity and alcohol usage is decreasing (Simons et al. 2010).

In South Africa substance usage is widespread among the population, where it is expected that 20% of women and sixty three percent of men are suffering from substance usage disorders (WHO, 2012). Moreover, drug-related activity in South Africa has been linked to poverty, decreased efficiency, unemployment, hereditary dysfunctions, political uncertainty, drug-related violence, gang activity, increasing rates of blood-borne illnesses, such as acquired immunodeficiency syndrome (AIDS) and tuberculosis (TB), injury, and premature mortality (Trenz et al. 2013).

Moreover, increased rates of drug usage in South Africa have been found, with 85.7% cannabis, 56.3% opiate, and 35.6% cocaine use among substance users in South Africa (Hoffman et al. 2000). Furthermore, studies conducted in sub-Saharan Africa have found strong associations concerning substance usage and sexual risk

behaviour. These sexual risk behaviours include, having multiple sex partners, having unprotected sex and engaging in sex for money and/or gifts (Morojele, Brook & Kachienga, 2006). Given that South Africa has the world's largest population of people living with HIV, this gives rise to a considerable amount of concern (Kalichman, Simbayi & Vermaak et al. 2008).

Illegal drug users very rarely restrict their usage to one substance and this has led to an increase in occurrence of polysubstance usage in South Africa which contributes to an already dreadful HIV epidemic. In addition, there have been increased diagnoses of sexually transmitted HIV and other sexually transmitted infections due to polysubstance usage (Trenz et al. 2006). Research by Simon, Maisto and Wray, (2010) has revealed that numerous health risk behaviours take place in combination with one another. However, it is frequently unclear which behaviour comes first. Substance usage intensifies the likelihood that an individual will initiate sexual activity and along with that, sexually experienced individuals are occasionally more likely to initiate substance usage (Simons, Maisto & Wray, 2010).

According to Roberts and Kennedy (2006), a substantial number of young people, including juvenile teens that cannot lawfully drink alcohol, report engaging in risky sexual behaviours because of alcohol or drugs usage. Among sexually active young people, 36%; aged 15 to 24 say that drinking alcohol or using drugs has influenced their decisions about sex,29% of teens aged 15 to 17 and 37% of young adults aged 18 to 24. A further 29% of sexually active young people aged 15 to 24 say they have "done more" sexually than they had planned while drinking or using drugs (Roberts & Kennedy, 2006).

Many young adults have confessed to doing more sexually than they had intended while under the effect of alcohol or drugs based on their decisions made while drinking or using drugs. Young people have also reported having unprotected sex and worrying about STDs and pregnancy (Kalichman et al. 2007). Morejele et al., (2006) reported that 73% of young people, aged 15-24 have also agreed that condoms frequently don't get used when individuals are consuming alcohol or using drugs. Moreover, in comparison to boys and young men, girls and young women are more likely to report that their friends are partaking in unprotected sex under the

influence; and this has been prevalent in 79% of young women as opposed to 65% of young men (Morojele et al. 2006). Despite the risks, 21% of young people; aged15-24, report saying, that it is not a big deal if their peers make decisions about sex while drinking or using drugs (Morojele et al. 2006).

In a study conducted by Morojele et al., (2006), many young adults admit that they have put themselves at risk because of alcohol or drugs. 23% of sexually active young people aged 15-24 report having had unprotected sex because they were consuming alcohol or using drugs, including 12% of teens 15-17 years of age and 25% of young adults aged 18-24 (Morojele et al. 2006). In total, 26% of sexually active teens aged, 15-17 have reported worrying about STDs or pregnancy, as have 28% of sexually active young adults aged 18-24 because of something they did while consuming alcohol or using drugs (Simons et al. 2010).

Among women, alcohol usage increases involvement in risky sexual encounters and sexual victimization, exposing them to the risk of unwanted pregnancies and STIs. It has also been shown that alcohol use and sexual risk behaviours increase during certain festivities and celebrations across countries (Kalichman et al. 2008). Alcohol use, especially among young adolescents, is related to casual sex encounters, traffic accidents, violence, crime, social problems and early sexual experience, as well as a high level of risk taking and alcohol usage, which increases the risk of contracting STIs and HIV among adolescents (Simons et al. 2010).

Understanding the patterns of drug and alcohol usage is imperative, in terms of designing and executing suitable interventions that will maximize recovery and decrease the risks associated with the dangers of alcohol and drug usage among susceptible populations. Individuals who use substances are most likely to participate in sexual risk behaviours while under the influence of drugs and/or alcohol (Trenz et al. 2013).

Alcohol and drug usage by young individuals could lead to problems such as, earlier sexual initiation, unprotected sexual intercourse, and multiple partners as well as putting young people at risk for sexually transmitted diseases (STDs), unintended pregnancy, and sexual violence (Simons et al. 2010). For many young adults alcohol and drug usage remain meticulously associated to sexual decision-making and risk-

taking (Roberts & Kennedy, 2006). One reason for the spread of HIV among these individuals is that intoxication through the practise of various substances may lead to a lack of attention to engaging in the practice of safe sex and/or a propensity toward engaging in high-risk sex (Simons et al. 2010). This research attempted to review some the sensitive behaviours that pose problems for research above, namely risky sexual behaviours and sex under intoxication. This research now goes onto review the problems experienced with the self-report of these behaviours in question. As mentioned previously reliability and validity is assessed in accordance with the accuracy of self-report and the amount of disclosure obtained.

2.2 The Problem with Self-Report

A self-report measure is a two-fold system, a combination of self-disclosure, involving truthful communications about oneself, and self-presentation, which is information on how one, desires to be considered (Hays, Hayashi & Stewart, 1989). The problem with self-report however, lies in the validity of self-reports, which becomes problematic as the amount of self-presentation increases in comparison to self-disclosure (Hays, Hayashi & Stewart, 1989). This is mainly because, many phenomena within specific cultural and social contexts are viewed as sensitive as they are private, stressful, sacred, stigmatized behaviours or illegal and a discussion about such a topic would generate an emotional response (McCosker, Barnard & Gerber, 2001).

Sensitive behaviours, such as alcohol, drug related and sexual behaviours are complex and influenced by many factors such as socio-economic, cultural, biological and psychological conditions, many of which cannot be easily externally validated or measured independently (Tourangeau & Yan, 2007). There is often some divide between what young people report their friends are doing and what they report themselves as doing (Catania, Mcdermott & Pallack, 1986). Collecting data on sensitive issues can be difficult as people are sometimes afraid of the consequences that could arise from admitting to such behaviours. Furthermore, responding to potentially sensitive questions should not be seen as simply providing information, but rather as an activity with complex motivations. These motivations can include maintaining social respect, obtaining social support, and altruism. Ideally, procedures

for collecting self-report data would maximize altruistic motivation while accommodating the other motives (Catania, Mcdermott &Pallack, 1986).

Many areas of health and behavioural research rely on self-report data, despite the knowledge that such data may not always be accurate and complete. Factors that motivate participation in research are complex and may lead to differential responding within different interview modes. For example, response bias can occur as a result of respondents' desire to present themselves in a favorable light (McCosker, Barnard & Gerber, 2001). Issues related to social desirability bias and threats to validity, have been reviewed below in an attempt to highlight the problems experienced with self-report.

2.2.1 Social Desirability Bias

Social desirability bias is a type of reporting bias that occurs when individuals deny engaging in what are perceived to be socially undesirable behaviours to avoid stigmatisation (McCosker, Barnard & Gerber, 2001).The central belief behind this theory tends to be that the person is not meaning to be malicious or deceitful, but is generally afraid to reveal information that he or she believes that society will judge them for (McCosker, Barnard & Gerber, 2001). This bias is usually most prevalent with personal questions regarding potentially sensitive issues, such as opinions on race, drug use, or sexual behavior, and may prevent researchers from compiling accurate information for studies (McCosker, Barnard & Gerber, 2001).

It is usually the result of differential reporting between two or more interview modes in comparable but separate samples from the same population (McCosker, Barnard & Gerber, 2001). Socially desirable answers can be produced as respondents attempt to portray themselves in a socially acceptable manner (Gregson et al. 2004). Social desirability pressure affects the validity of self-reports because it results in decreased reporting of socially undesirable behaviour or increased reporting of socially desirable behaviour (Hays, Hayashi & Stewart, 1989).

Research results can be weakened by bias, leading to false associations or failure to identify true relationships. Information that is considered obvious or already known is less likely to be reported (Brener, Billy & Grady, 2003). Questions which involve

characteristics that are considered desirable to have, activities that are considered desirable to engage in, or objects that are considered desirable to possess are most likely to be influenced by social desirability bias (Brener, Billy & Grady, 2003).

Another construct related to social desirability that might account for response biases is the desire for attention. This factor is particularly likely to lead to response biases among adolescents, for whom some behaviours, such as alcohol use, drug use, and sexual behaviour, are associated with status in certain settings (Brener, Billy & Grady, 2003). Respondents also have a tendency to report consistent information in line with what they have reported to similar questions. A known bias exists, in terms of reporting of behaviours that might be seen as more socially desirable and an equivalent inclination to avoid disclosures that might cause emotional distress, such as shame, remorse and embarrassment (Catania et al. 1996). There are also well known gender differences in reporting of lifetime sexual partners, such as, women are more likely than men to under report, while men are more likely than women to over report their lifetime sexual partners. This in turn can introduce large biases into survey estimates (Langhaug et al. 2010).

Socially desirable responding is a phenomenon that researchers should be aware of when they are designing their research study. However, the fact that some participants may respond in a socially desirable fashion on self-report questionnaires does not mean that self-reports should be discarded altogether (Korb, 2011). Indeed, depending on the variable that is to be measured, self-report instruments are typically the most valid form of measurement (Korb, 2011).To reduce the risk of social desirability bias in studies, researchers may use the Marlowe-Crowne Social Desirability Scale or the Hays five item social desirability scale (Catania et al. 1996).

These scales are comprised of a series of questions designed to predict the likelihood of a person answering in a socially desirable, rather than completely truthful, manner. The questions used are about personal traits and attitudes, and if a person does not tend to disclose any even slightly negative answers about him or herself, he or she may be deemed as not acceptable as a valid respondent (Catania

et al. 1996). However, in a study conducted by Strahan and Garbasi, (1970), which made use of an eight item scale, it was found that when reliability of a short form scale is low, the effect may be reversed and possibly showing the effect of the behaviour in question on social desirability rather than the effect of social desirability on responding. The next section will be looking at the threats to validity experienced in research on sensitive topics.

2.2.2 Threats to Validity

Investigation of sexual behavior, substance use, and other socially sensitive behaviors typically relies upon self-report. Self-report of such behaviors is vulnerable to self-presentation and demand biases, therefore, investigators often administer surveys anonymously in order to promote honest reporting and to minimize bias. Valid and reliable information on sensitive behaviour is of extreme significance. This is especially important in terms of monitoring the spread of sexually transmitted infections, planning effective sexual health programmes and services and assessing interventions (Tourangeau, & Yan, 2007). The greatest challenge for surveys of sexual behaviour is to get reports from participants that relate as closely as possible to the reality of their experience (Bornstein, 1994).

Sensitive questions are believed to affect three significant survey outcomes (Langhaug et al. 2010). These include overall, or unit response rates, that is, the proportion of participants who take part in the survey, item nonresponse rates, which is the proportion of participants who agree to take part in the survey but who refuse to respond to a particular ***item and response accuracy***, and the proportion of participants who answer the questions honestly, all of which have an outcome on the validity and reliability of the study (Langhaug et al. 2010).

Sensitive questions are assumed to be causing problems on all three outcomes, by lowering overall item response rates and decreasing accuracy as well (Catania et al. 1996).
Consequent under-reporting of sexual behaviours makes it hard to: understand trends in HIV prevalence or incidence, to design suitable behavioural interventions and to understand their effects (Catania et al. 1996).

Researchers have realised a gap between the validity and reliability of the self-reported measures and other outcomes and have found various reasons why ensuring validity in self-reports of sexual behaviour is challenging (Bornstein, 1994). The decision to include a self-report measure of sexual risk behaviours is often one of practicality, due to self-reports being cost effective and easy to administer (Brener, Billy & Grady, 2003). Factors that can cause variability in the accuracy of self-report include:

- The sensitivity of the information required
- The quality of the validation criteria
- The personal characteristics of the respondents
- The time window of the self-report and
- The demand characteristics of the task situation (e.g., clinical interview vs research evaluation)(Brener, Billy & Grady, 2003).

Cognitive factors can compromise validity and yield inaccurate data as a result of factors such as respondents' poor comprehension or faulty recall, whereas situational factors can compromise validity as a result of factors such as the method of survey administration, which include confidentiality or anonymity and/or social desirability bias. However, cognitive and situational factors do not affect the validity of each type of self-reported behaviour equally (Brener, Billy & Grady, 2003).

The method by which the sample is selected from a sampling frame is important to the external validity of a survey, that is the sample has to be representative of the larger population in order to draw inferences about the population in question (Brener, Billy & Grady, 2003). The gender of the researcher can also have an impact on research dealing with sensitive information, especially in terms of interview settings. This impact affects the rates of disclosure and can be dealt with by ensuring the gender of the researcher on the researched is somewhat similar. Large samples that are randomly selected are more beneficial as they are proven to yield more accurate results (Brener, Billy & Grady, 2003).

Factors assumed to be particularly significant in terms of biasing results, include the presence of others while responding to questions and respondents' perceptions of the level of privacy and/or confidentiality that responses possess (Brener, Billy & Grady, 2003). A seeming lack of confidentiality, anonymity, or privacy within the situational context could also cause response biases because of a fear of the consequences based on the responses provided. In particular, behaviours that are illegal, stigmatized, or loaded with ethical implications may be underreported because of this concern (Brener, Billy & Grady, 2003).

It has been argued by Dare and Cleland (1994) that self-reports of sensitive behaviour are naturally unreliable and invalid due to multiple sources of bias, including under-reports of stigmatised behaviours and over-reports of normative behaviours and based on this, it has been suggested that behavioural data produced by these self-report methods can be worthless. The validity of self-report data for sexual behaviours that present a risk for HIV infection has been questioned, suggesting that participants in behavioural research are inclined to intentional misrepresentation (Dare & Cleland, 1994).

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 (Tourangeau & Yan, 2007). This is especially visible in survey questions about drug use, sexual behaviours, voting, illegal behaviour and income, which are usually thought of as sensitive and as a result, they tend to produce reasonably higher nonresponse rates or larger measurement error in responses than questions on other topics (Tourangeau & Yan, 2007).

The improvement of measurement techniques requires increased attention. The possibility for change ranges from questionnaire wording and ensuring privacy and confidentiality to improving questionnaire delivery modes (Catania et al. 1996). Additionally the argument has involved the use of computer technologies to enhance accurate reporting. It has further been exemplified that an obligation to the aims of the research; belief in the legitimacy of the survey; assurances of confidentiality; a professional approach on the part of the interviewer; and perceptions of the

therapeutic benefit of disclosure can facilitate ease and accuracy of disclosure of sensitive information and this appears to be consistent across both survey and in-depth interviewing formats (Bornstein, 1994). This research now goes on to review the research methods used to research sensitive and otherwise risky behaviours with an in dept focus on the research methods utilized in this study.

2.3 Research Methods

Answers to questions that are potentially embarrassing, threatening, stigmatizing, or incriminating are more likely to be filled with bias due to untruthful and vague responses (Catania et al. 1996). Traditionally, the field of health research has relied on interviewer-administered questionnaires and or self- report surveys and questionnaire instruments to collect self-reported sensitive behaviour information. A growing concern for improved validity has prompted researchers to explore other questionnaire delivery modes (Bornstein, 1994).

Regardless of these criticisms and concerns, researchers continue to rely on self-report methods to assess the extent of sensitive behaviours, since ethical and practical considerations can sometimes limit the use of more direct assessment methods (Cohen & Dent, 1992).

In response to these criticisms and concerns, there have been a number of recommendations to improve the validity of self-reported sexual behaviour, these include, using appropriate measures for behaviours of interest, using easily understood language, using techniques, which include These techniques include; the Face-To-Face Interview (FTFI) (Gregson et al. 2004), the Random Response Technique (RRT) (Coutts and Jann, 2009), the Unmatched Count Technique (UCT) (Dalton et al. 1994), the Self-Report Questionnaire (SRQ) (Korb, 2011), the Informal Confidential Voting Interview (ICVI) (Gregson et al. 2004) and the Audio Computer Assisted Self-Interview (ACASI) (Ghanem et al. 2005), which improve recall of behaviour as well as asking questions in a direct fashion, all of which will be reviewed below.

This research attempts to review the above mentioned techniques in an attempt to highlight the efficiency of the techniques chosen for use in this research. This research makes use of the Audio Computer Assisted Self Interview, the Self-Report Questionnaire and the Unmatched Count Techniques, Type I, which is the traditional Unmatched Count Technique and the Unmatched Count Techniques Type II which is a variation of the UCT Type I in terms of it having innocuous items which are related to the behaviour in question. For purposes of generating a discussion these methods will be split into two categories, namely direct and indirect estimation techniques, all of which have been developed in an attempt to deal with the issues experienced above. The Randomised Response Technique (RRT) and the Unmatched Count Technique (UCT) form part of indirect estimation techniques and the Audio Computer Assisted Self Interview (ACASI), Self-Report Questionnaire (SRQ), Informal Confidential Voting Interview (ICVI) will form part of direct estimation techniques.

2.3.1 Indirect Estimation Techniques

2.3.1.1 Randomised Response Technique

The randomized response technique (RRT) is a survey method especially developed to improve the accuracy of answers to sensitive questions. The RRT technique has been implemented in various forms, however, all of these forms rely on the pairing of an unthreatening question with the sensitive question of interest. Socially sensitive questions are thought to be threatening to respondents (Coutts & Jann, 2008). Some studies have found that when sensitive or incriminating topics are studied, the overall results of randomized response studies are more valid than the results of direct question designs (Coutts & Jann, 2008).

However other studies have found that the randomized response design is less efficient than direct question designs, making it necessary to recruit larger samples (Lensvelt – Mulder, Hox, & Van der Heijden, 2005).

Other problems experienced, were with the randomizing device, which is used to determine how the respondent will answer the sensitive question. This is especially because the direction of the response is known only to the respondent. For example, a respondent may be asked to flip a coin to determine whether to automatically

answer a sensitive question as “yes” or “no” which would represent either “heads” or “tails”. Since only the respondent knows whether he or she has flipped heads or tails, a “yes” answer cannot be interpreted as an admission of guilt (Coutts & Jann, 2008).

Randomized response procedures work by adding random noise to the data, therefore they all suffer from larger standard errors, leading to reduced power, which makes it necessary to use larger samples than in question–answer designs (Lensvelt – Mulder, Hox, & Van der Heijden, 2005). Unfortunately, larger samples are associated with prolonged completion time and higher research costs, making randomized response methods less attractive to applied researchers, which in turn leads to the topic of efficiency versus effectiveness (Coutts & Jann, 2008).

Effectiveness is related to the validity of research results in the same way that efficiency is related to reliability (Lensvelt – Mulder, Hox, & Van der Heijden, 2005). RRTs are also problematic with respect to several other areas, such as the limited trust that RRTs motivate and non-response rates generated, and that the RRT estimates are unreliable due to a strong false “no” bias, especially for the more sensitive questions (Coutts & Jann, 2008). RRT’s generate a large amount of variance and reduce rates of self-disclosure, which is problematic for studies that rely on these self-disclosure rates as an analogue of validity (Droitcour, Caspar & Hubbard et al. 1991).

Also, two important factors need to be considered before the technique can be used effectively in self-administered modes. The first is the costs of the technique, especially with regards to the respondent’s time and effort and the larger sample sizes required. Secondly, researchers need to carefully consider which of the technique’s many implementations are best understood and most trusted by respondents. This factor is especially important in situations in which no interviewer is present to answer questions about the technique (Coutts & Jann, 2008).

2.3.1.2 UCT Type I and Type II

2.3.1.2.1 Overview of the UCT

The UCT technique, its theoretical discussion, and statistical foundations, can be traced back to the 1970s by Dalton et al., (1994). This method is also known as the list experiment or the unmatched count technique and is an alternative to the commonly used randomized response method. This most commonly used method has been based on a simple process known as the difference-in-means estimator. This is often accomplished by taking the difference between the average response among the treatment group and the average response among the baseline group.

In the UCT, participants receive a series or set of statements and respond by indicating the number of statements that are true for them. One of the statements is the item of interest, half the sample receives the questionnaire with the item of interest and the other half receives the statement without the item of interest (La Brie & Earleywine, 2000). The UCT does not allow the researcher to make conclusions about the respondents' behaviour on the basis of their answers, because the respondent can answer sensitive items without ever having to admit to a given behaviour (Coutts & Jann, 2008). Various studies point to the effectiveness of the UCT in providing higher estimates of such sensitive behaviours as employee misconduct, shoplifting, hate crime victimization, and risky sexual behaviours (Coutts & Jann, 2008).

2.3.1.2.2 Advantages

Advantages of using the UCT include a more accurate estimate of the base rate for sensitive behaviour, absolute anonymity for participants, legal immunity to the researcher and facilitation of complete disclosure to subjects of the research method. A possible explanation for this is that questions are asked indirectly and no participant is required to indicate which of the statements they agree with (La Brie & Earleywine, 2000). The UCT has an important advantage over other techniques such as the RRT in that no randomizing device is required. This presumably both increases respondent trust in the technique and makes it less time consuming (Coutts & Jann, 2008). The UCT provides participants with an opportunity to answer sensitive items without ever having to admit to a given behaviour, thereby reducing

social desirability bias, increasing the response rates and providing greater anonymity than direct self-report measures (La Brie &Earleywine, 2000). Research suggests that the Unmatched Count Technique is a valuable self-report technique for sensitive items when compared to traditional self-report techniques (Dalton et al.1994). The UCT unlike the methods reviewed below is an indirect survey based estimation method, which reduces the level of self-disclosure that a truthful answer entails by enabling participants to respond to questions without ever having to directly admit to the behaviour in question (Droitcour et al. 1991).

2.3.1.2.3 Problems with the UCT

However, understanding of the technique may remain an issue. Dalton et al., (1994) found better results with more educated respondents, although it is unclear if this reflects greater understanding of the technique or more frequent admission of the sensitive behaviour in question. A big disadvantage of the UCT is that it yields proportions data i.e. prevalence data only and researchers cannot tie the data to individuals (Dalton et al. 1994). Ceiling effects can also occur, as when a respondent would honestly respond yes to all non-sensitive items. When this occurs respondents no longer have the protection to honestly report their responses to the sensitive item, which could result in a respondent underreporting the sensitive behaviour in question.

This ceiling effect also results in negative proportions as respondents, report bigger numbers for non-sensitive datasets and smaller numbers for datasets containing sensitive items. This amounts to poor comparability between the control and sensitive item groups (Dalton et al. 1994). Misrepresentation by or misunderstanding of respondents in terms of the questionnaire has also been found to impact on the overall performance of the UCT. It has also been found, that there is a possibility that some respondents attempt to react against seeming to possibly endorse the sensitive item that they report zero for that response set, regardless of their non-sensitive item counts, thereby lowering the overall base rate estimates of that dataset (Dalton et al. 1994).

The concerns over ceiling effects and a lack of privacy protection have led to three generally accepted pieces of design advice. First, high prevalence non-sensitive

items, which would increase the occurrence of ceiling effects, should be avoided (Droitcour et al.1991).Second, low prevalence non-sensitive items should be avoided. If respondents are aware that all the non-sensitive items have low prevalence, they may become concerned about the level of privacy protection and underreport their answers. Third, lists should not be too short because short lists will also tend to increase the likelihood of ceiling effects (Droitcour et al. 1991).

Attempting to limit the analysis of UCT results to the difference in mean calculations is insufficient. Base rate estimates are easily altered in response to measurement error and where reliability of the non-sensitive item counts is low; an impact on measurement error can be expected (Dalton et al. 1994). While this research, found the present evaluation of the UCTs to be promising, it should be highlighted that the derived base rates are approximations and should not be treated as exact measures of the behavior in question; however, it should be acknowledged that the base rates obtained are better estimates than those provided by more conventional survey methods (Dalton et al. 1994).

In an attempt to deal with the problems experienced with the use of the UCT various researchers have proposed various solutions. Tsuchiya (2005) extends this method and considers an efficient estimation of the quantity of interest in different subpopulations defined by a discrete covariate. Chaudhuri and Christodes (2007) propose to improve the standard item count technique by slightly modifying the way the sensitive item is incorporated and derive a new estimator. It has also been found that the way the items feature in the list regarding the stigmatizing characteristic for both samples is phrased may create suspicions or confusion similar to those in randomized response technique (Chaudhuri & Christofides, 2007).

Therefore, to increase the sense that the list of items serves a meaningful purpose and therefore increase the level of cooperation of the participants, the items should seem to blend together and give the impression that the number reported to the interviewer is a meaningful piece of information (Chaudhuri & Christofides, 2007). Having this in mind, the innocuous items should not be totally unrelated to the stigmatizing item. In addition, some of the innocuous statements could be phrased in a way similar to the statement regarding the stigmatizing characteristic (Chaudhuri &

Christofides, 2007). If respondents answer the list questions honestly, then the estimator will be unbiased, and therefore most list experiment designers have tried to create lists that will give respondents the privacy protection necessary to allow for honest responses.

Glynn (2010) suggests an adjustment to the difference-in-means estimator, which yields greater efficiency at the cost of bias. Finally, although statisticians have extensively studied the randomized response method, the item count technique has recently emerged as a viable alternative among applied empirical researchers across a number of disciplines (Glynn, 2010).

Regardless of the problems experienced, this method of data collection has been used broadly in various studies, which include self-reports of racial prejudice (Kuklinski et al., 1997; Gilens et al., 1998), drug use (Droitcour et al., 1991), employee theft (Wimbush and Dalton, 1997), and risky sexual behavior (LaBrie and Earleywine, 2000), Using the Unmatched Count Technique (UCT) to estimate base rates for sensitive behaviour (Dalton et al. 1994) andItem count technique in estimating the proportion of people with a sensitive feature (Chadurie & Christofides, 2007). Although the validity of this method remains to be investigated more carefully, some researchers have reported promising initial results (Tsuchiya, 2005; Holbrook and Krosnick, 2010; Coutts and Jann, 2008).

2.4 Overview of the Indirect Assessment Techniques

Based on the research reviewed above, we find that RRTs are problematic with respect to several domains, such as the limited trust they inspire non-responsiveness, and that the RRT estimates are unreliable due to a strong false no bias, especially for the more sensitive questions. The UCT, however, is a promising alternative to RRT in self-administered surveys and future research could be directed towards evaluating and improving this technique. One obvious advantage of the unmatched count technique over the randomized response technique is that it does not require respondents to conduct randomization.

Another advantage is that respondents can easily understand why and how the unmatched count technique provides privacy. The unmatched count technique has

gained in popularity over the randomized response technique, due to a least two reasons. The unmatched count technique only requires that respondents be able to answer the number of items on a list apply to them, and therefore it is easier to conduct and easier to understand than the randomized response technique, which requires respondents to flip a coin or to utilize some other randomization device. Also, recent experimental results have shown that the unmatched count technique inspires more trust and acceptance among respondents and produces more reliable answers than the randomized response techniques (Coutts and Jann, 2009).

2.5 Direct Methods

2.5.1 SRQ

Self-report questionnaires contain a set of relevant statements and a variety of response formats, including, true and false options, checklists and scaled responses etc, and ask participants to answer direct questions about themselves and are extensively used to measure beliefs, attitudes, feelings and opinions (Korb, 2011). The use of forced choice approaches also reduces social desirability bias but may have methodological implications in terms of scale reliability (Korb, 2011).

The SRQ is viewed as minimizing respondents anonymity, which results in possible feelings of embarrassment and therefore inaccurate reporting on sensitive information, which results in the data being viewed as unreliable (Dalton et al. 1994). However, self-report measures are still popular for a number of reasons. Firstly they represent an affordable way in terms of both time and money with regards to obtaining data. Secondly they can be easily implemented to large samples and they can be used to measure constructs that would be difficult to obtain with behavioural or physiological measures, such as sensitive information or information related to personality traits of an individual (Foxcroft, 2011).

2.5.2 FTFI

Sexual behaviour data have traditionally been captured in face-to-face interviews (FTFIs), but such interviews have been shown to elicit significantly lower reported numbers of sexual partners when compared with recently developed interview formats that are more impersonal and anonymous (Gregson et al. 2004). In studies

that require more in-depth information, the FTFI has shown that prompting individuals with additional questions can lead to enhanced recall of past sexual relationships (Brewer et al. 2005).

The FTFI was also found to have higher reporting instances on sensitive behaviour as the interviewers prompted participants to respond as compared to the other techniques (Van der Elst et al. 2008). However further research on the efficacy of the FTFI found that FTFI tends to overestimate the extent of sexual behaviours and knowledge and that the FTFI method may be less advantageous to use than self-administered questionnaires (Ghanem et al. 2005).

2.5.3 ICVI

The ICVI is a blend of the FTFI and self-completion methods (Gregson et al. 2004). The ICVI method was designed by Gregson et al., (2004), which made use of a portable wooden voting box that is completely secure with two separate compartments consisting of a voting slot each. This is unique in comparison to the self-report method (Gregson et al. 2004). The voting box is pre-locked in two places: at the voting slot cover, which is never opened until after data collection, as well as at the lid. The hinged lid of the box serves as a large screen for the respondent, which conceals their responses from the interviewer (Gregson et al. 2004). Of the two compartments, one compartment is used to collect the signed informed consent forms; this is done to prevent the interviewer from learning the respondent's name, and the other compartment collects the response tokens used by the respondent to answer the questions (Gregson et al. 2004).

The first part of the interview is conducted using an informal variant of the FTFI which is used to establish motivation, enable a strong rapport between the respondent and researcher and to sensitize the respondent to the non-prejudicial viewpoint of the researcher and the study and question progress from relatively straightforward matters to more private topics (Gregson et al. 2004). During the interview the purpose and motivation of the research is discussed, non-threatening and non- sensitive questions are discussed as well as issues pertaining to the study. As the interview progresses the sensitive items are included, with the most sensitive parts being included in the second half of the ICVI (Gregson et al. 2004).

During the second half of the ICVI, the researcher reads a number of questions to the participant, who then indicates their answers on a sheet of paper and then places that sheet of paper into a slot in a locked box (Gregson et al. 2004). The answer is out of sight of the researcher and the participants can choose to respond to the various questions on the tokens in any given order, thereby maximizing anonymity such that the researcher is unaware of which question the participant is responding to at that time on the token (Gregson et al. 2004). This has proven successful in preventing socially desirable answers and increasing reliability and validity of the data especially with regards to risky behaviour related to HIV/AIDS (Gregson et al. 2004). However, little research has been conducted using the ICVI and more research is required in order to establish the efficacy of the method.

2.5.4 CASI/ ACASI

Computer assisted self-interviewing (CASI) has been promoted as an interview mode to limit response bias when gathering sensitive information dealing with behaviours perceived to be socially undesirable. CASI is a computer based technology whereby respondents answer questionnaires in complete privacy without the direct participation of an interviewer (Ghanem et al. 2005). During interviews using CASI methods, respondents answer questions posed in text on the computer screen; in most cases, questions are also posed in audio while respondents listen over headphones, this is also referred to as audio-CASI or ACASI, thus making it useful even among individuals with limited reading ability (Ghanem et al. 2005).

ACASI has been studied in various populations to obtain behavioural data on illicit drug use, HIV risks, and adolescent behaviours. There are numerous practical advantages to ACASI formatted surveys: consistency in the way questions are asked thus maximising standardisation; limited handling of data forms, protecting participant confidentiality; creating ease in modifying questionnaires to suit a multilingual study setting, and decreased staff effort related to data entry (Ghanem et al. 2005). There are also limitations to this technology. The use of CASI may reduce the ability to probe for clarification of responses given or elicit responses that require empathy. It may also enable a participant to go through a survey without seriously considering their responses (Ghanem et al. 2005).

However, regardless of these concerns, research on computerized interviewing has shown that replacing the interviewer with a computer can provide conditions, such as privacy and the perception of anonymity, that facilitate reliable and honest reporting, thereby increasing reports of sensitive behaviour in surveys of the general population (Van der Elst et al. 2008). The ACASI appears to reduce bias significantly and is feasible and acceptable in resource-poor settings with low computer literacy. Its increased use would likely improve the quality of questionnaire data in general and sexual behaviour data specifically (Langhaug et al. 2010).

Eighteen studies comparing the audio computer-assisted survey instruments (ACASI) or its derivatives computer-assisted personal interview (CAPI) against other self-administered questionnaires, namely the face-to-face interviews or random response technique have found the ACASI to be more effective in obtaining responses to sensitive information (Langhaug et al. 2010). The ACASI has been found to have lowered item non-response rates and raised rates of reporting sensitive behaviours and resulted in improved data entry quality (Langhaug et al. 2010).

In a study conducted by Boekeloo et al., (1994) it was concluded that audiotape administration of a culturally sensitive sexual behaviour measure was found to be preferable, in comparison to written or face-to-face interview versions of the same measure because it resulted in fewer missing responses for several behaviours, including unprotected vaginal sex with steady or non-steady partners, unprotected receptive anal sex with steady or non-steady partners, multiple partners, and sex with a homosexual or bisexual man.

2.6 Overview of the Direct Assessment Techniques

Questionnaire delivery modes can affect self-reported sexual behaviours (Langhaug, Sherr& Cowan, 2010). The SRQ is found to be an affordable and easily implementable method (Foxcroft, 2011). The FTFI was found to have higher reporting instances on sensitive behaviour as the interviewers prompted participants to respond as compared to the other techniques (Van der Elst et al. 2008).

It was also found that the ACASI can significantly reduce reporting bias (Langhaug, Sherr& Cowan, 2010). ICVI interviews can reduce social desirability bias in data on HIV associated risk behaviour (Gregson et al. 2004).

Based on the research reviewed above, we find that the direct self-report questionnaires have very little differences in terms of their abilities and numerous studies can account for their use. However due to the computer-based nature of this study, the ACASI and SRQ were selected for use in this study as these methods could be successfully incorporated into the computer-based nature of this study. The ICVI would not have been compatible with this study as it requires a wooden box and both the ICVI and FTFI would require interviewers. The motivation behind this decision lies in the notion that computer-administered questionnaires had the fewest missing data, promoted confidentiality and resulted in more sensitive behaviours being disclosed (Langhaug et al. 2007). Since this study is based on disclosure rates of sensitive behaviours, the direst assessment techniques best suited for this particular study were chosen as the ACASI and SRQ.

To assist the reader a table has been provided below with an overview of all the research methods discussed above.

Table 2: summary of research methods

Method	Type of assessment technique	Advantages	Disadvantages
RRT	**Indirect**	• **Can be more reliable than direct methods**	• **Inspires limited trust** • **Inspires a high nonresponse rate** • **Can be unreliable** • **Costly** • **Time consuming** • **Requires a large sample size**
UCT	**Indirect**	• **Does not require randomization** • **Provides privacy**	• **Base rates obtained are mere estimates** • **Possible measurement**

		• **Does not require full disclosure of information** • **Base rates obtained can be better estimates than conventional methods**	**error** • **Ceiling effects** • **Yields proportionate data**
SRQ	**Direct**	• **Forced choice reduces social desirability bias** • **Affordable** • **Easy to implement**	• **Minimizes anonymity** • **Can result in inaccurate reporting of sensitive behaviours**
FTFI	**Direct**	• **Probing results in more in-depth information** • **Higher reporting instances due to probing**	• **Can overestimate the extent of sexual behavior compare to other techniques**
ICVI	**Direct**	• **Combines features of the SRQ and FTFI** • **Provides confidentiality and anonymity** • **Proven to reduce social desirability bas**	• **Little research has been conducted using the ICVI**
ACASI	**Direct**	• **Useful for individuals with limited readability** • **Maximizes standadisation** • **Protects confidentiality** • **Can be used in a multi lingual study**	• **Reduces the ability to probe for clarification** • **May enable a participant to go through a survey without seriously considering their responses.**

2.7 The Current Study

Gaining valid answers to sensitive questions is an age-old problem in survey research. Various techniques have been developed to guarantee anonymity and minimize the respondents' feelings of threat, as a result of the consequences associated with the behaviour in question. It has also been found that assessment techniques do affect self-reported sexual behaviours. Two of these types of

techniques reviewed above, include the direct and indirect assessment techniques. The indirect assessment techniques reviewed above include the randomized response technique (RRT) and the unmatched count technique (UCT). The direct assessment techniques include the Self-Report Questionnaire (SRQ); Face to Face Interview (FTFI), Informal Confidential Voting Interview (ICVI) and the Audio Computer Assisted Self-Interview (ACASI).

This study is the first of its kind and wishes to draw a comparison between the indirect and direct research methods such as the UCT Type I and II, SRQ and the ACASI all of which are implemented in a computer-assisted setting. In this study the effectiveness of different implementations of the UCT were evaluated, such as the traditional UCT, which is classified as UCT Type I and the variation of it, which is classified as UCT Type II, in a computer-assisted setting, by implementing Chaudhuri and Christofides (2007) suggestion of including items related to the behaviour in question, thereby creating a UCT Type II.

The techniques were evaluated according to various quality criteria, such as the prevalence estimates they provide, the ease of their use, and respondents trust in the techniques.
This study was conducted, by drawing on historical research conducted by (Chaudhuri & Christofides 2007, Coutts & Jann, 2009, Dalton et al. 1994, Gregson et al. 2004,LaBrie&Earleywine, 2000, Langhaug et al. 2007, Langhaug, Sherr & Cowan, 2010 & Van der Elst et al. 2008) to name a few. It is a quantitative experimental survey research and is backed up by a normative study which improved the validity and reliability of the sensitive items researched in this study.

The normative study sought to establish a set of norms regarding the sensitivity of the items for the population of interest in the study. These items were then included into the modes of survey used in this study, namely the ACASI, SRQ and UCT's Type I and II, in order to establish which method has the highest rates of disclosure as an analogue of validity. The instruments possess rigour as they have been derived by previous studies conducted by the above mentioned researchers, as well

as pilot studies conducted at UKZN, by Honours and Masters Students such as (Alledahn, 2011, Joubert 2011).

The reliability and validity of the instruments depends on the response rates obtained from the participants. Reliability and validity of the techniques, the ACASI, SRQ, UCT Type I & Type II is assessed in accordance with the amount of disclosure they generated in terms of sensitive issues. This is important as it is argued (Dalton et al. 1994 & LaBrie & Earleywine, 2000) the greater the amount of disclosure the more validity studies using these techniques will possess.

Studies of this kind previously conducted at UKZN found that the ICVI fundamentally resulted in better quality data than the SAQ and the FTFI on topics of sensitivity and controversial behaviours (Pienaar, 2003). On the other hand the UCT was found to be more effective in eliciting honest answers to sensitive questions than the SRQ (Joubert, 2011 & Shaik 2012). The current study on the other hand wishes to compare the ACASI, SRQ, UCT Type I and Type II, which is a variation of the UCT Type I in terms of having innocuous items that are related to the sensitive behavior in question (Chaudhuri & Christofides, 2007) as a means of obtaining valid and reliable responses to questions on risky behaviours. This is the first of its kind and forms part of a set of related studies, which will compare the various research methods; such as the ACASI, UCT Type I & Type II, SRQ, ICVI and FTFI and this study will participate in the following components of the larger study:

- The norming component.
- Comparing the disclosure rates of sensitive behaviours.
- Comparing group rates of social desirability bias across survey modes.
- The measurement of participant experiences of the different survey modes.

Chapter 3

3. Aim and Rationale

This research attempted to address the problem of reliability and validity with regards to sensitive issues, which range from sensitive, private or risky behaviours, as well as the reliability and validity of the self-report, and methods which improved the

reliability and validity of the self-report of sensitive issues. This research was exploratory in nature. It aimed to present the findings from the sample of UKZN students, to highlight the challenges of research in this area, and emphasized the need for further and better research to be conducted into the modes of survey used when researching sensitive or otherwise risky behaviours in the South African context. Health research has relied on interviewer-administered questionnaires and or self- report surveys and questionnaire instruments to collect self-reported sensitive behaviour information and since self-reports are potentially filled with bias due to untruthful and vague responses. The need for exploring techniques that are capable of diminishing this bias needs to be established. This research makes use of the UCT Type I and II, the SRQ and the ACASI in order to establish which of these techniques are capable to elicit honest responses to sensitive questions.

Therefore, this research project has the following central aims:

1. To norm and scale a range of sensitive and non-sensitive (related and unrelated) behaviours, in terms of sensitivity for this population, namely university students, in the sensitivity domains of sex and intoxication.
2. To discover which methods, the ACASI, SRQ, UCT Type I and UCT Type II yields the highest rates of disclosure as an analogue of validity
3. To understand the participants experiences of the different modes of survey
4. To compare group rates of social desirability across the methods investigated in this study

All four methods as previously mentioned are argued to reduce social desirability bias in various ways, encourage low non-response rates and promote high rates of disclosure. Therefore a study comparing the base rate estimates of each of these techniques is necessary and can be beneficial to future interventions and programmes pertaining to sensitive issues and risky behaviour.

3.1 Research Questions

1. Which of these methods, the ACASI, SRQ, UCT Type I and UCT Type II yield greater disclosure rates in studies which concern sensitive issues?

2. Which mode of survey provides a better experience for the participants in terms of feeling comfortable enough to disclose sensitive information?
3. Which methods possess the lowest group rates of social desirability bias across the methods investigated?

The following hypotheses were tested using the above mentioned methods:

$H_{0:}$ There is no significant difference between (method1) and (method2)

H_1: There is a significant difference between (method1) and (method2)

Table 3.1: Pairwise hypotheses

Comparison	H_0	H_1
ACASI/SRQ	H_0: $\mu_{ACASI} = \mu_{SRQ}$	H_1: $\mu_{ACASI} \neq \mu_{SRQ}$
ACASI/UCT I	H0: μACASI = μ UCT I	H1: μACASI ≠ μUCT I
SRQ/UCT I	H0: μSRQ = μ UCT I	H1: μSRQ ≠ μUCT I
ACASI/UCT II	H0: μACASI = μ UCT II	H1: μACASI ≠ μUCT II
SRQ/UCT II	H0: μSRQ = μ UCT II	H1: μSRQ ≠ μUCT II
UCT I/UCT II	H0: μUCT I = μ UCT II	H1: μUCT I ≠ μUCT II

The Social desirability and experience of participation was constructed using the following hypotheses based on the same pair wise comparisons as illustrated in table 3.1:

Social Desirability

$H_{0:}$ There is no significant difference in social desirability mean scores between (method1) and (method2)

H_1: There is a significant difference in social desirability mean scores between (method1) and (method2)

Experience of Participation

$H_{0:}$ There is no significant difference in experience of participation mean scores between (method1) and (method2)

H_1: There is a significant difference in experience of participation mean scores between (method1) and (method2)

Chapter 4

4. Methodology

4.1 Research Design

This study made use of four research methods, the UCT Type and II, the ACASI and SRQ in order to establish which of these techniques will improve our understanding of the differences in self-reported sexual behaviours. The design that was used in this study was a quantitative experimental cross sectional between subjects survey research design. This study consists of two parts, a norming study and an experimental design, all of which will be reviewed below. The norming study was a pen and paper format and the experimental design consisted of computer-based questionnaires, which consisted of four questionnaires, namely the UCT Type I and II, the SRQ and the ACASI.

4.1.1 Norming Study

The normative study was used to discover which behaviours were deemed as sensitive and non-sensitive for the population from which the sample for the main experimental study would be drawn. Sensitivity was rated according to two domains, namely, risky sexual behaviours and sex under intoxication. The normative study was also designed to determine the items that could be used in the main method comparison study. In respect of the UCT I and UCT II, these items included the non-sensitive distractor items and the related non-sensitive items. These behavioural items were then used in the main study to explore which survey modes were able to produce greater rates of disclosure as an analogue of validity.

4.1.2 Experimental Design

The ability for quantitative designs to provide comparative analyses was useful in establishing which of the methods, namely the ACASI, SRQ and UCT Type I and II

yielded greater rates of disclosure (as an analogue of validity). Participants' group allocations were randomly determined, by means of the cross method randomizing technique, employing an online randomizing tool (www.randomizer.org), which randomized participants across the different survey modes and across the different sensitivity domains that are part of the larger study. All participants completed a demographic component as well as a social desirability scale (Hays et al. 1989) and a short questionnaire on their experiences of responding to the different survey modes. The participants' perceptions of the methods and the social desirability base rates were then obtained.

4.2 Sample

Convenience sampling was used to recruit participants of both genders for the study. Students at the University of KwaZulu-Natal were recruited and were between the ages of 18-25. Purposive sampling was used by means of walking around campus and recruiting participants for the study. For the norming study participants were approached on campus and handed the questionnaires which they filled out and handed back to us.The experimental study was conducted in a computer lab with a total of fourteen computers, therefore researchers walked around campus recruiting participants to attend the lab and participate in the study.People were randomized to the various methods using the online randomizing tool and each method was randomly assigned to one of the fourteen computers in the lab, one computer per UCT Type I and II and three were assigned for ***each of the ACASI and SRQ questionnaires***. The study ran five days a week from 08:30 to 17:00. A minimum of 40-50 participants were required for each mode of assessing data and a minimum of 100 for the UCT specifically (LaBrie & Earleywine, 2000).

4.2.1 Incentives

Incentives were offered in terms of each participant receiving R20.00 for participating in the study.

4.2.2 Informed Consent

Informed consent was obtained from participants by means of participants signing a consent form. Participants were provided with an informed consent form when participating in the study, which stated that their participation was 100% voluntary

and that they were free to withdraw at any time as well as stating that their answers would be treated as 100% confidential. Participants were informed as to the aims and purpose of this research, which was in accordance with being honest with the participant and promoting autonomy. All information will remain confidential and the anonymity of each participant will be protected. All aspects of the research were made clear to the participants and no deception took place (The Belmont Report, 1979).

Confidentiality was assured on the consent form; the information required on the computerized questionnaires for each condition, only included age, gender, race and year of study, which cannot identify the participants. The research at the end of the study will be kept for 5 years by my supervisor Mr. Vernon Solomon and the University. The data will be stored for further analysis along with the data from the set of related studies as part of an ongoing PhD research conducted by the supervisor, after which it will be stored by the supervisor in a password protected folder.

Non-maleficence means do no harm; therefore careful consideration of any potential risks to the participants was considered (The Belmont Report, 1979). However if the participants were to feel any sense of discomfort through the research process, they were referred to the Student Counseling service of their respective college or the Child and Family Centre linked to the Psychology department and located on the Pietermaritzburg campus. All participants were assured that any information attained through this research would not be used for any other reason except for this research and the larger set of related studies. The results have been written up as a project in fulfillment of the requirements for Masters in Psychology (MSocSc, Psychology). The report will be presented at the post-graduate conference at the end of 2013 and a paper will be submitted to a journal for publication. No parental consent was required as all participants will be over the age of eighteen.

Refer to appendix1, 2 & 3, for information sheet, consent form and the referral letter. The information sheet contains all the relevant information about the research; the consent form outlines the participant's voluntary willingness to participate (See

Appendix 1, 2 & 3). The study received SHREC approval (HSS/0837/013CA – see Appendix 3) and Gatekeeper approval (See appendix 3)

4.3 Data Collection

4.3.1. Norming Study

The questionnaire contained a total of 186 items, that were derived from a review of literature, South African risk studies, and local studies, as well as historical research conducted by Dalton et al. (1994) in his study, 'Using the unmatched count technique (UCT) to estimate base rates for sensitive behavior, " Dunkle, K.L., Jewkes, R., Nduna et al., (2004) in their study "Transactional sex with casual and main partners among young South African men in the rural Eastern Cape: Prevalence, predictors and associations with gender-based violence" and LaBrie and Earleywine, (2000) in their study "Sexual risk behaviours and alcohol: Higher base rates revealed using the unmatched-count technique," to name a few. The items thematically related to sensitivity were meant to accommodate the UCT Type II, as Chaduri and Chrisdofides (2007) suggest that totally unrelated items may compromise the performance of the UCT, therefore the UCT Type II required non-sensitive items that were related to the sensitive items. Students were asked to rate the items on a 4 point Likert type scale, with the following options:

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

The norming study posed the following question, "Which items do the student sample rate as sensitive and which as non-sensitive?" and the question posed to determine sensitivity was, "If the item were true for me, I would not want anyone to know about it." Sensitivity was operationalised in the norming study by asking participants to indicate which of the behaviours, *if they were true for the participant*; they would not like anyone to know about it. The norming part of the study was a paper and pencil rating sheet.

Each page in the questionnaire had the instructions at the top of the page to remind participants what was expected of them, this was done in the hope of eliminating forgetfulness, due to the length of the questionnaire. The norming study consisted of four different questionnaires, labeled A, B, C, and Din which items were ordered randomly and distributed across four forms in a counter-balanced design to counter response set and fatigue given the length of the questionnaire (See Appendix 4).

4.3.2. Experimental Study

4.3.2.1 Modes of Survey

The results obtained from the norming study were then used to construct the computerized questionnaires, namely the UCT Type I and II, the SRQ and the ACASI which were used in this study in a computer-based format. Each questionnaire contained questions in relation to the domains of risky sexual behaviour and sex under intoxication and an information sheet and a consent form (See Appendix 1 & 2), as well as a social desirability scale at the beginning, derived from Hays et al. (1989) and an experience of participation questionnaire at the end of the questionnaire. All the questionnaires were administered in a laboratory setting consisting of fourteen computers enclosed in a cubicle and administered via a computer interface using MediaLab ™ software. The ICVI and FTFI were part of the larger study.

4.3.2.2. Structure of the modes of survey

Each experimental condition utilized in this study, namely the ACASI, SRQ and UCT Type I and II, contained demographic questions concerning the participant's age, gender, race and year of study. The social desirability and experience of participation consisted of a five point likert scale. The options for the social desirability scale and experience of participation scale were as follows:

Social Desirability:

The five-item questionnaire was developed by Hays et al. (1989). This scale uses five of the questions and provides five responses, definitely true, mostly true, don't know, mostly false, and definitely false. Of these responses, only the two extremes,

that is definitely true and definitely false are scored. Below are the Hays social desirability questions used and the scale:

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***

Social Desirability Scale:

1. ***Definitely True***
2. ***Mostly True***
3. ***Don't Know***
4. ***Mostly False***
5. ***Definitely False***

Experience of Participation Questions:

These questions were incorporated into the study with the aim of establishing participants' perceptions of the methods used in this study, namely the ACASI, SRQ and UCT Type I and II. These questions were constructed in the hope of being able to establish which method enabled participants' to feel comfortable enough to disclose sensitive information, as rates of disclosure, as an analogue of validity is extremely important in this study. The variables of anonymity, privacy, protection, confidentiality and the participants trust in the method informed the development of these items.

Below are the questions used in the experience of participation and the scale:

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***

Experience of Participation Scale:

1. ***Strongly Agree***
2. ***Agree***
3. ***Undecided***
4. ***Disagree***
5. ***Strongly Disagree***

4.3.2.3. Experimental Conditions

4.3.2.3.1. ACASI and SRQ

The ACASI and SRQ each had one condition, as all seventy-one questions used were able to fit into one questionnaire and easily administered, since only true and false answers were required (Please see Appendix 5 for questionnaire formats). The only difference between the two techniques lies in one having an audio attached to it. Participants who responded to the ACASI were able to listen to the questions via a headset as opposed to having to read them of the screen. Apart from that there were no other differences present in the format between the ACASI and SRQ.

4.3.2.3.2 UCT Type I and II

The UCT Type I and Type II each had four conditions that were split into UCT A, B, C and D. UCT A and C contained sensitive items in datasets 1, 3 and 5 and UCT B and D contained sensitive items in datasets 2 and 4 (LaBrie & Earleywine, 2000). Below is an illustration of the structure of the UCT Type I and II:

Table 4.1: Structure of the UCT Type I

FORM A/C	FORM B/D
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

Table 4.2: Structure of the UCT Type II

FORM A/C	FORM B/D
Set 1:	**Set 1:**
- **Innocuous related item**	- Innocuous related item
- **Innocuous related item**	- Innocuous related item
- **Innocuous related item**	- Innocuous related item
- **Innocuous related item**	- Sensitive item
- **Innocuous related item**	- Innocuous related item
Set 2:	- Innocuous related item
- **Innocuous related item**	**Set 2:**
- **Innocuous related item**	- Innocuous related item
- **Innocuous related item**	- Innocuous related item
- **Sensitive item**	- Innocuous related item
- **Innocuous related item**	- Innocuous related item
- **Innocuous related item**	- Innocuous related item

4.3.2.3.3 Sensitive Questions

Hereunder are the questions obtained from the norming study, which were selected for use in the experimental study as part of the domains of risky sexual behavior and sex under intoxication:

- " I regret having had sex"
- "I have had sex with a teacher or lecturer,"
- "I have had more than two sexual partners in the last three months,"
- "I have had sex with a partner who was 10 or more years older than me at the time,"
- I am HIV positive"
- "I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop),"
- "I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection"
- "I have refused to use a condom,"
- " I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes)
- "I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics)"
- "I have been forced to have sex"
- "I have forced someone to have sex with me,"
- "I have had to slap, kick or bite someone to stop them from having sex with me, "
- "I have raped someone,"
- "I have raped someone together with one or more of my friends,"
- "I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted,"
- "I have had sex with someone when I was so drunk that I do not remember it,"
- "I have had sexual intercourse when so under the influence of alcohol that I was unable to consent"
- "I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol"
- "I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them)"

4.4 Data Analysis:

4.4.1 Norming Study

The data obtained from the questionnaires was coded and entered into a programme, SPSS. This study made use of SPSS statistical software as it is easy to use and economical. The data was managed with IBM SPSS 21. Factor analysis was conducted for all 186 items.Factor Analysis and Principal Components Analysis were both used to reduce a large set of items to a smaller number of dimensions and components.

These techniques are commonly used when developing a questionnaire to see the relationship between the items in the questionnaire and the underlying dimensions. It is also used in general to reduce a larger set of variables to a smaller set of variables, which aims to explain the important dimensions of variability (Jennrich & Sampson, 1996). Specifically, Factor analysis was used for this study to establish the dimensions of variability. Varimax rotation was used and a factor analysis was conducted for eigenvalues greater than 1.00.Factor loadings of 0.4 or higher were utilized in this study and all items scoring below 0.4 were suppressed. The results from the norming study was analysed by making use of sensitive and non-sensitive items that correlate at 0.4 or higher.

Sensitive and non-sensitive items were needed for inclusion in all the survey modes as explained above.The norming study data determined item selection for the survey mode comparison study. Two clear components emerged from the factor analysis, these were sensitivity and non-sensitivity. Sensitivity for the norming study as mentioned above was operationalised by participants not wanting someone to know about a certain behaviour if I were true, so all behaviours which were linked to the "true for me" option were treated as sensitive and all behaviours that were linked to the "not true at all for me" option were treated as non-sensitive.

For purposes of this study the non-sensitive category had to be split into two; namely, non-sensitive related and non-sensitive unrelated. Non-sensitive related items were selected on the basis of them being linked to the sensitive behaviour in question, in terms of them dealing with a participant's health and general well-being. The remaining items which were unrelated to health or to the sensitive items were

treated as non-sensitive unrelated items. The central aim of the study was to make use of the top 20 sensitive items; top 20 non-sensitive unrelated and top 20 related non-sensitive items were selected for use in the survey modes, namely the ACASI, SRQ and UCT Type I and II for this study. However, due to technical errors, two sensitive items had to be dropped as one was a repletion (" I Look after my body") and the other was the only drug question to make the list ("Have taken drugs intravenously (injectable)") and these were replaced by two other questions ("I have had the usual childhood illnesses") and ("I have drunk alcohol"), these were chosen for use in the UCT type II as they were related to health and general well-being.

4.4.2 Comparison of Survey Modes

4.4.2.1 ACASI and SRQ

The survey modes used in this study were the ACASI, SRQ and UCT Type I and II. The ACASI and SRQ produce count data, while the UCT's produce proportionate data. In order for an analysis to be performed across the methods, the data had to be in the same format. The easiest and most efficient way was to convert the ACASI and SRQ count into proportions and then use WINKS to do a pair wise test of proportions analysis across the samples. WINKS SDA 7.0.5 was used to analyse the results of the survey modes. The test difference between proportions function was used to obtain the differences between the proportions. The proportions for the ACASI and SRQ were obtained by counting the amount of positive responses obtained per question and then dividing it by a hundred. The results obtained were then used for comparison across the methods.

4.4.2.2 UCT TYPE I and II

The UCT Type I and Type II are slightly more complex. Condition A and Condition B of the unmatched count technique contain a set of questions. These sets consisted of five non-sensitive statements each. In condition A the second and fourth sets of statements contain a sensitive statement in addition to the five non-sensitive statements and in Condition B, the first, third and fifth series of statements contain a sensitive statement in addition to the five non-sensitive statements. Rather than indicating which of the specific statements apply to them, participants are required to

indicate only the number of statements in each series that apply to them (LaBrie & Earleywine, 2000).

This method then assumes that the mean number of positive responses will be higher on the series with the sensitive statement, which indicates a positive response to the sensitive statement (Dalton et al. 1994). By subtracting the average number of statements endorsed in each set of behaviours in Group A from the average number of behaviours in Group B the proportion of those individuals involved in the sensitive behaviour can be calculated (Coutts & Jann, 2008).

In order to do this the means will be calculated for each of the five sets on form A and form B of the UCT. The mean of set one on form B is expected to be greater than the mean for set one on Form A of the UCT due to the additional sensitive item found on form B (LaBrie & Earleywine, 2000). To determine the base rate for the sensitive behaviour Dalton et al., (1994) made use of the following equation:

Estimate (p) = meanb– meana

Where p = the proportion of subjects involved in the sensitive behaviour
Meanb = the mean number of statements indicated by the subjects with the sensitive statement
Meana = the mean number of statements indicated by the subjects without the sensitive statement
The proportions calculated were then multiplied by the number of participants who completed the questionnaire containing the sensitive statement to determine how many people had endorsed the sensitive statement.

The survey modes mentioned above were than analysed using winks and a pairwise comparison was conducted across all methods as listed below:

Statement of Hypotheses:

$H_{0:}$ There is no significant difference between (method1) and (method2)
H_1: There is a significant difference between (method1) and (method2)

Table 4.3: Pairwise hypotheses

Comparison	H_0	H_1
ACASI/SRQ	H_0: $\mu_{ACASI} = \mu_{SRQ}$	H_1: $\mu_{ACASI} \neq \mu_{SRQ}$
ACASI/UCT I	H0: μACASI = μ UCT I	H1: μACASI ≠ μUCT I
SRQ/UCT I	H0: μSRQ = μ UCT I	H1: μSRQ ≠ μUCT I
ACASI/UCT II	H0: μACASI = μ UCT II	H1: μACASI ≠ μUCT II
SRQ/UCT II	H0: μSRQ = μ UCT II	H1: μSRQ ≠ μUCT II
UCT I/UCT II	H0: μUCT I = μ UCT II	H1: μUCT I ≠ μUCT II

4.4.2.3 Social Desirability and Experience of Participation

Social desirability and experience of participation were analysed using Reliability Statistics and an ANOVA. Reliability for both the Social Desirability and Experience of Participation was calculated using Cronbach's alpha, which is the most common measure of reliability, that is, how closely related a set of items are as a group. It is most commonly used when you have multiple Likert questions in a survey/questionnaire that form a scale and you wish to determine if the scale is reliable.

An ANOVA was used, as it creates a way to test several null hypotheses at the same time. The logic behind this procedure has to do with how much variance there is in the population. The one-way analysis of variance (ANOVA) was specifically used to determine whether there are any significant differences between the means of the four independent, unrelated groups. This would have indicated which method resulted in higher rates of social desirability bias and which method had the best experience of participation.

Furthermore, Social Desirability and Experience of Participation scale responses were scored as 1 for every socially desirable response and positive experience of participation score, such as all participants who chose the options “definitely true” or

"strongly agree" were regarded as 1 and all other responses were scored as 0. Thus, the maximum score a participant may obtain is 5 for the social desirability and 9 for the experience of participation and the minimum score was 0. In doing so measurement error averages out when individual scores are summed to obtain a total score, thus decreasing the overall measurement error. For purposes of data analysis for each participant, the total scale scores were then transformed to a 0-100 score distribution so that it could be interpreted directly as a percentage. A mean was then calculated after adding the total scale scores and an ANOVA was conducted for comparisons across all methods.

As table 4.3 illustrates hypotheses being tested for rates of disclosure, the social desirability bias scale and experience of participation scale attempted to test the above methods against each other in order to establish, which method had higher base rate estimates for social desirability and experience of participation.

The Social desirability and experience of participation was constructed using the following hypotheses:

Social Desirability

$H_{0:}$ There is no significant difference in social desirability mean scores between (method1) and (method2)
H_1: There is a significant difference in social desirability mean scores between (method1) and (method2)

Experience of Participation

$H_{0:}$ There is no significant difference in experience of participation mean scores between (method1) and (method2)
H_1: There is a significant difference in experience of participation mean scores between (method1) and (method2)

4.5 Anticipated Problems

Problems I anticipated included finding participants of different genders and races to participate in the study, especially considering the topic at hand. People are generally reserved about sexual issues and don't like participating in such studies.

This was dealt with by informing the participants that the data obtained will be confidential as well as assuring them that their responses would not be traced back to them or could not be traced back to them as no personal information was required. The computerized nature of this study was beneficial in maintaining this confidentiality between the researchers and participants.

Chapter 5

5.1 Results

A total of 1004 participants were recruited for this study. 89 participants' data had to be discarded. A total of 916 participants' data was used for analysis in this study, which is inclusive of the norming study and the experimental study. Below is a total breakdown of the sample used in this study.

5.1.1 Norming Study

360 participants were recruited for the norming study. 54 were discarded in the norming study due to the questionnaires being incorrectly filled out or handed back to us incomplete.

5.1.2 Experimental Design

644 were recruited for the experimental study. 34 were discarded in the main study, especially in terms of the UCT; participants inputted alphabets instead of numbers. The data collected from the four respective methods of self-report, namely the UCT Type I and II, SRQ, and the ACASI, were set for comparison on the extent of self-disclosure of sensitive behavior, social desirability bias as measured by the Hays five-item social desirability scale and experience of participation. The raw data was scored according to the scoring techniques described in the above section, and was entered into SPSS and WINKS SDA. Below are the demographic details of the study.

5.2 Demographics of UKZN Student Population

Race and gender demographical details indicate that there are more black (7422) students than Indian (1205), White (769), Coloured (215) and other race groups (34) on campus and that there are more females (5628) than males (4017) on campus. The racial and gender sample across campus is unevenly distributed. This can also

be seen in the table and by the graphs depicted below: Supplied by Division of Management Information UKZN (personal correspondence, March 2013).

Race	Total
Black	7422
Coloured	215
Indian	1205
Other	34
White	769
Gender	**Total**
Female	5628
Male	4017

Table 5.1: UKZN Demographical information

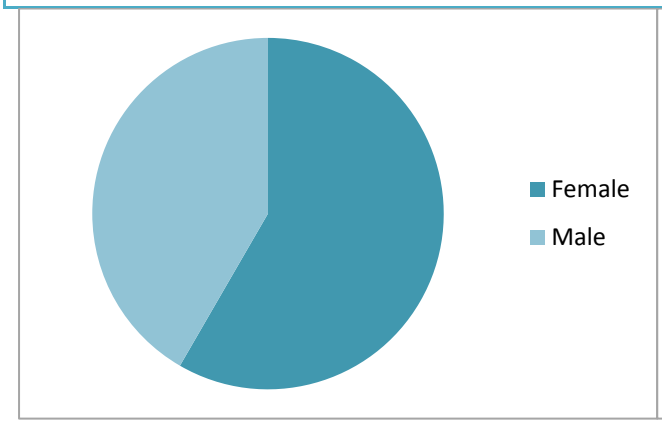


Figure 5.1

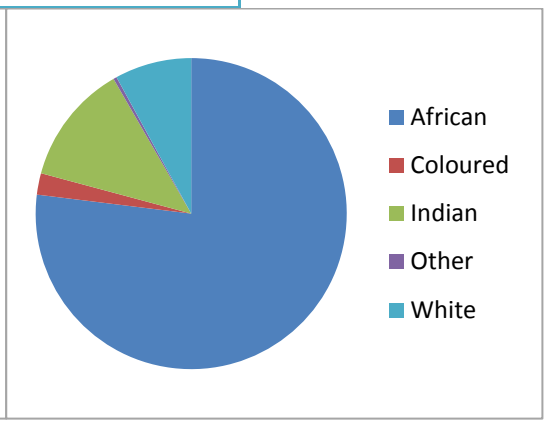


Figure 5.2

This study attempted to make use of a sample that fairly represented UKZN, below are the demographics obtained for the norming study and the experimental study. However, year of study and age demographics for UKZN were not available.

5.3 Norming Study Demographics

As explained above the norming study questionnaire consisted of four forms which were labeled A, B, C, and D. Based on the distribution below it can be seen that the four versions of the forms were almost equally distributed across our sample.

Table 5.2: Norming Study: Questionnaires

Group

	Group	Total	Percent
Valid	A	75	24.5
	B	79	25.8
	C	72	23.5
	D	80	26.1

The norming study demographical details indicate that majority of our sample were between the ages of 19 and 21. 72% of our sample was 19 year olds, 60% were 20 year olds and 56% were 21 year olds as can be seen below.

Table 5.3: Demographics: Norming Study - Age

Age

	Age	Total	Percent
Valid	0	12	3.9
	18	23	7.5
	19	72	23.5
	20	60	19.6
	21	56	18.3
	22	31	10.1
	23	26	8.5
	24	9	2.9
	25	3	1.0
	26	2	.7
	27	1	.3
	28	2	.7
	29	3	1.0
	32	1	.3
	33	1	.3
	35	1	.3
	43	1	.3

	45	1	.3
	49	1	.3
	Total	306	100.0

Large amounts of our sample were female participants which is a good representation of UKZN since there are more females than males at UKZN. Our sample consisted of 61.8% females and 35.3 males as can be seen below.

Table 5.4: Demographics: Norming Study– Gender

Gender

	Gender	Total	Percent
Valid	0	9	2.9
	Male	108	35.3
	Female	189	61.8
	Total	306	100.0

The majority of our sample were first year students, which is expected since the majority were in the age group of 19 to 21. 98% of our sample were 1st year students as can be seen below.

Table 5.5: Demographics: Norming Study – Year of Study

Year of Study

	Year of Study	Total	Percent
Valid	0	9	2.9
	1	98	32.0
	2	72	23.5
	3	90	29.4
	4	37	12.1

A large part of our sample for the norming study were Black (63.1%) and Indian (20.3%) students, with Coloured and White students being equally sampled(6.9%). This is almost in keeping with the racial dispersion at UKZN.

Table 5.6: Demographics: Norming Study - Race

Race

	Race	Total	Percent
Valid	0	8	2.6
	Black	193	63.1
	Coloured	21	6.9
	Indian	62	20.3
	White	21	6.9
	Other	1	.3
	Total	306	100.0

5.4 Survey Modes, Social Desirability and Experience of Participation Demographics

The experimental study consisted of four conditions, two direct assessment techniques and two indirect assessment techniques, namely the ACASI, SRQ (Direct) and the UCT Types I and II (Indirect). The direct techniques were evenly distributed with a total 17.2% completed by 105 participants. The UCT's were more than the ACASI and SRQ as each UCT needed two forms to be completed, based on its structure as discussed above and the UCT also required a minimum of 40-60 participants per form A and B. This study made use of 100 participants per form, resulting in a total of 200 UCT's being completed as can be seen below.

Table 5.7: Demographics: Experimental Study – Experimental Conditions

Survey Modes

	Survey Mode	Total	Percent
Valid	ACASI	105	17.2
	SRQ	105	17.2
	UCT1	200	32.8
	UCT2	200	32.8
	Total	610	100.0

The experimental study made use of mostly 18-24 year olds with a total of 54.4% being in the 18-20 year age group category and the 41.1% being 20-24 year olds as

can be seen below. This is almost in keeping with the age demographics utilized in the norming study.

Table 5.8: Demographics: Experimental Study – Age

Age

	Age	Total	Percent
Valid	18-20	332	54.4
	20-24	251	41.1
	24-26	19	3.1
	27+	8	1.3
	Total	610	100.0

The gender demographics are in keeping with the gender distribution of UKZN with more females (67.7%) than males (32.3%) participating in the experimental study.

Table 5.9: Demographics: Experimental Study – Gender

Gender

	Gender	Total	Percent
Valid	Male	197	32.3
	Female	413	67.7
	Total	610	100.0

47% of participants were in their 1st year of study for the experimental study which is the same as the norming study sample used as can be seen below.

Table 5.10: Demographics: Experimental Study – Year of Study

Year of Study

	Year of Study	Total	Percent
Valid	1st	287	47.0
	2nd	140	23.0
	3rd	89	14.6
	4th	94	15.4
	Total	610	100.0

The experimental study consisted of more Black (88.5%) followed by White (5.9%), Coloured (3.6%) and Indian (1.8%) participants as can be seen below. Considering the racial distribution as UKZN this is a fairly reasonable distribution.

Table 5.11: Demographics: Experimental Study - Race

Race

	Race	Total	Percent
Valid	Black	540	88.5
	White	36	5.9
	Coloured	22	3.6
	Indian	11	1.8
	Other	1	.2
	Total	610	100.0

5.5 Norming Study Results

Factor analysis was used for the norming part of this study as the latent variables in this study included data collection of sensitive or otherwise risky behaviours which cannot otherwise be observed and therefore the participants interpretation of what is sensitive, non-sensitive and otherwise related or completely unrelated to sensitivity was required.

The two components obtained from the factor analysis conducted were, sensitive and non-Sensitive. Our study further required the non-sensitive items be split into two categories, namely items that are non-sensitive and completely unrelated to the behavior in question, and items that are non-sensitive but related to the behavior in question as discussed above.

This was extremely important for inclusion in the UCT types I and II. UCT type I needed non-sensitive unrelated items and UCT type II needed non-sensitive related items. The items thematically related to sensitivity were meant to accommodate the UCT Type II, as Chaudhuri and Chrisdofides (2007) suggest that totally unrelated items may compromise the performance of the UCT, therefore the UCT Type II required non-sensitive items that were related to the sensitive items. The items chosen for the non-sensitive related category were the items that were related to overall health and well-being of the individual, such as visiting a doctor or getting tested for HIV, and which were possibly related to the behavior in question.

Since all the items chosen for use in the study in relation to the behaviours were chosen from literature, namely historical research conducted by (Chaudhuri & Christofides, 2007, Dalton et al. 1994 & LaBrie & Earleywine, 2000), there was some guidance available in terms of which items from the list of items could feature in each category. Items in the non-sensitive unrelated questions were items with a high correlation with non-sensitive factor but that were extremely general and unrelated to the overall health and well-being of the individual. While the norming study was beneficial in terms of generating items for the modes of survey, a major problem experienced was that not enough items with a high correlation that could be used in the non-sensitive related category were found. Items such as “felt ready the first time I had sex, “Know where to buy condoms”, “Am comfortable receiving gifts from my sexual partner”, “am concerned about contracting a sexually transmitted disease”,

“am comfortable with casual sex and first had sex between the ages of 14 and 18” to name a few featured below the .4 in terms of correlating highly with sensitivity and non-sensitivity, thereby limiting our options for UCT type II and the overall modes of survey. For the credibility of the study, items above .4 were selected; however items that were better suited for the UCT Type II were below .4 and could not be used. Regardless of these issues experienced, seventy one items and three categories were derived from the overall results of the norming study; these included the items listed below (See Appendix 6):

Table 5.12: Norming Study – Factor Correlations

Sensitive Items	Correlation
I am HIV positive	**.519**
I have been forced to have sex	**.713**
I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes)	**.693**
I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).	**.659**
I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted	**.746**
I have forced someone to have sex with me	**.772**
I have had more than two sexual partners in the last three months	**.633**
I have had sex with a partner who was 10 or more years older than me at the time	**.657**
I have had sex with a teacher or lecturer	**.651**
I have had sex with someone when I was so drunk that I do not remember it	**.773**
I have had sex with someone who wasn’t a regular partner because I’ve needed material things (e.g. rent, food, cosmetics)	**.718**
I have had sexual intercourse when so under the influence of alcohol that I was unable to consent	**.761**
I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol	**.688**

I have had to slap, kick or bite someone to stop them from having sex with me	.649
I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection	.702
I have raped someone	.658
I have raped someone together with one or more of my friends	.651
I have refused to use a condom	.641
I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them	.745
I regret having had sex	.645
Non-Sensitive Related Items	
I always use condoms when having sex	.411
I am careful about risky sex	.437
I can drive quite well after two drinks	.513
I don't drive when I have been drinking	.563
I drink alcohol in moderation	.584
I have had the usual childhood illnesses	
I have allergies	.592
I have been slightly drunk	.468
I have been tested for HIV	.487
I have drunk alcohol	.408
I have engaged in light petting (kissing, fondling)	.448
I have felt peer pressure to drink alcohol	.422
I have gone to a local clinic when sick	.483
I have gone to the chemist when sick	.662
I have gone to the doctor when sick	.591
I have had diagnostic tests done in the last year	.501
I have often drunk alcohol	.474
I have seen a doctor in the last year	.511
I have seen any kind of health practitioner in the last year	.623
I have taken antibiotics in the last year	.559

I know about the “morning after” pill	.555
I know my HIV status	.584
I know where to get condoms for free	.465
I know where to get the contraceptive pill	.446
I sometimes drink alcohol socially	.474
I take vitamins almost everyday	.433
I think sex is ok in a committed relationship	.556
I am at risk for HIV	.610
I am careful with my diet	.479
I have used a condom the last time I had sex	.431
Non-Sensitive Unrelated Items	
I use the internet from my cell phone	.665
I went to a private high school	.562
I am on Facebook	.567
I can speak more than 2 languages reasonably well	.599
I can type reasonably well	.605
I don’t normally eat breakfast	.595
I drink coffee	.615
I drink tea	.635
I have an internet connection at home	.597
I know what a “conversion” is in rugby	.561
I have been to Durban	.649
I subscribe to electronic newsletters	.560
I live with my family	.558
I have watched the movie “Tsotsi”	.601
I know the name of the premier of KwaZulu-Natal	.572
I often watch television late at night	.619
I use the internet almost every week	.563
I own a laptop computer	.636
I own at least one cell phone	.641
Reading is a hobby for me	.587

I watch the news on TV at least 3 times a week	**.625**

5.6 Survey Mode Results

The following section contains a series of tables, which are necessary in order to report the findings of the study. These tables contain proportion of endorsements obtained per methods (table 5.13) for all of the behaviours in question, the *p-values* and *z-scores* obtained during the winks analysis, and the hypotheses tested. In these tables as mentioned below the blank cells and underlined proportions indicate values that could not be analysed by winks due to them being negative or above 1. A brief narrative has been provided above each table to assist the reader, the meaning of these results has been further elaborated in the discussion section.

In total 610 ACASI, SRQ and UCT Type I and Type II questionnaires were analysed. Below are the proportions of people who positively endorsed the sensitive items listed in each questionnaire. The UCT Type I consists of seven questions and UCT type II consists of five questions, that cannot be further analysed by Winks SDA as they contain negative proportions or have proportions that are greater than 1, these figures are underlined below.

Table 5.13: Experimental Study – Survey Mode Proportions

Questions	Survey Mode Proportions			
	ACASI	**SRQ**	**UCT I**	**UCT II**
I am HIV positive	**0.06**	**0.04**	***1.36***	**0.76**
I have been forced to have sex	**0.07**	**0.11**	***-.44***	**0.6**
I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes)	**0.11**	**0.14**	**0.64**	**0.38**
I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).	**0.15**	**0.2**	**0.74**	**0.3**
I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted	**0.31**	**0.45**	***-.72***	***1.12***
I have forced someone to have sex with me	**0.7**	**0.11**	**0.38**	**0.86**

I have had more than two sexual partners in the last three months	**0.34**	**0.25**	**0.8**	**0.94**
I have had sex with a partner who was 10 or more years older than me at the time	**0.2**	**0.26**	**0.04**	**0.54**
I have had sex with a teacher or lecturer	**0.11**	**0.06**	**0**	**-0.12**
I have had sex with someone when I was so drunk that I do not remember it	**0.15**	**0.13**	***1.78***	**0.38**
I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics)	**0.11**	**0.11**	**0.86**	**1**
I have had sexual intercourse when so under the influence of alcohol that I was unable to consent	**0.16**	**0.12**	***-0.5***	**0.76**
I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol	**0.25**	**0.24**	**0.08**	**0.68**
I have had to slap, kick or bite someone to stop them from having sex with me	**0.13**	**0.14**	**0.1**	**-0.22**
I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection	**0.02**	**0.05**	**0**	**0.14**
I have raped someone	**0.02**	**0.02**	**0.64**	**0.94**
I have raped someone together with one or more of my friends	**0.03**	**0.02**	***-.62***	**0.22**
I have refused to use a condom	**0.13**	**0.12**	**0.22**	***1.62***
I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them	**0.17**	**0.2**	**0.8**	**-0.12**
I regret having had sex	**0.34**	**0.34**	***-.48***	**0.34**

5.6.1 Percentages of endorsements per question based on the proportions above:

The levels of endorsements obtained across all four modes of survey, namely the ACASI, SRQ and UCT types I and II, utilized in the experimental study will be reviewed below. These percentages and hypotheses will be viewed in the following

three tables below, namely table 5.14, table 5.15 and table 5.16. It should be emphasized that extremely high levels of disclosure obtained in this study for the various risky sexual behaviours should be interpreted with caution as reviewed in the literature above; the percentages obtained in the UCT are mere estimates (Coutts & Jann, 2008). Pairwise comparisons between all the modes of survey will be reviewed below and the results will be discussed further in the discussion section.

5.7 Modes of Survey:

5.7.1 ACASI/SRQ

For the pairwise comparison using the SRQ and the ACASI across all questions, we find minimal differences, except for the question, "*I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted*," which was endorsed by ***45%*** of people in the SRQ. This was also the only question that resulted in the hypothesis being rejected as can be seen in table 5.14, table 5.15 and table 5.16.

5.7.2 ACASI/ UCT Type I

The pairwise comparison between the ACASI and the UCT Type I, had higher levels of disclosure occurring between them, with the null hypothesis being rejected for all the questions that were comparable in the study, except for three questions, "*I have had to slap, kick or bite someone to stop them from having sex with me*," ***13%*** of participants using the ACASI endorsed this item and ***10%*** of participants using the UCT Type I endorsed the item. The other similarity existed in the item, "*I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection*," ***2%*** of participants endorsed this item in the ACASI and ***0%*** of participants endorsed this item in the UCT Type I. "*I have refused to use a condom*" was endorsed by ***13%*** in the ACASI and ***22%*** in the UCT Type I and neither method had a higher level of disclosure in terms of this item.

For the comparable items that caused the null hypothesis to be rejected, *"I have had more than two sexual partners in the last three months*," "*I have had sex with a partner who was 10 or more years older than me at the time*," "*I have had sex with a teacher or lecturer*," the ACASI performed better, with the ACASI obtaining higher disclosures, ***34%***, ***20%***

and ***11%*** as compared to the UCT Type I, ***8%***, ***4%*** and ***0%*** respectively across all the comparable questions.

The UCT Type I performed better than the ACASI for the following two questions, by evidencing a higher amount of disclosure across all the questions. The questions include, "*I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*," "*I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection.*" The UCT Type I had ***74%*** and ***0%*** in comparison to ***20%*** and ***2%*** obtained in the ACASI respectively. However, this should be interpreted with caution.

UCT Type I had higher levels of disclosure, in terms of obtaining information from participants with the UCT Type I obtaining significantly higher disclosures as compared to the ACASI. For transactional sex items used in this study, "*I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes)*," and "*I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics)*," the UCT Type I obtained ***64%*** and ***86%***of endorsements respectively, whereas the ACASI obtained ***11%*** for both. "*I have forced someone to have sex with me*" and "*I have raped someone*," which fall under the coercive sex category, was endorsed by ***38%*** and ***64%*** of participants respectively in the UCT Type I and by ***7%*** and ***2%*** of participants in the ACASI.

The section on sex under intoxication achieved higher disclosures in respect of disclosure from the ACASI than the UCT Type I for the two comparable questions, "*I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol*" and "*I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them*," with the ACASI obtaining ***25%*** and ***17%*** respectively and the UCT Type I achieved ***8%*** of endorsements for both.

5.7.3 SRQ/ UCT Type I

The pairwise comparison between the SRQ and the UCT Type I, also had higher rates of disclosure, with the null hypothesis being rejected for all the questions that were comparable in the study, except for two questions, "*I have had to slap, kick or bite someone to stop them from having sex with me*," ***14%*** of participants using the SRQ endorsed this item and ***10%*** of participants using the UCT Type I endorsed the item.

The other similarity existed in the item; "*I have refused to use a condom*" was endorsed by ***12%*** in the SRQ and ***22%*** in the UCT Type I. For the comparable items that caused the null hypothesis to be rejected, *"I have had more than two sexual partners in the last three months*," "*I have had sex with a partner who was 10 or more years older than me at the time*," "*I have had sex with a teacher or lecturer*," the SRQ performed better, with the SRQ obtaining higher rates of disclosures, ***25%***, ***26%*** and ***6%*** as compared to the UCT Type I, ***8%***, ***4%*** and ***0%*** respectively across all the comparable questions.

The UCT Type I performed better than the SRQ for the following two questions, by evidencing a greater amount of disclosures across all the questions. The questions include, "*I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*," "*I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection*." The UCT Type I had ***74%*** and ***0%*** in comparison to ***20%*** and ***5%*** obtained in the SRQ respectively. Again the significantly higher levels of disclosure need to be interpreted with caution.

The UCT Type I was found to be better, in terms of obtaining information from participants with the UCT Type I obtaining significantly higher rates of disclosures as compared to the SRQ. For transactional sex items used in this study, "*I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes)*," and "*I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics)*," the UCT Type I obtained ***64%*** and ***86%***of disclosures respectively, whereas the SRQ obtained ***11%*** and ***14%*** respectively for both. "*I have forced someone to have sex with me,*" and "*I have raped someone*," which fall under the coercive sex category, was endorsed by ***38%*** and ***64%*** of participants respectively in the UCT Type I and by ***11%*** and ***2%*** of participants in the SRQ.

The section on sex under intoxication achieved higher rates of disclosures from the SRQ than the UCT Type I for the two comparable questions, "*I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol*" and "*I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them*," with the SRQ obtaining ***24%*** and ***20%*** respectively and the UCT Type I achieved ***8%***of disclosures for both.

5.7.4 ACASI/ UCT Type II

For the ACASI and the UCT Type II, the null hypothesis was rejected for all the questions that were comparable in the study, except for one question, "*I regret having had sex*" which was on par with a total of ***34%*** of participants endorsing this item across the ACASI and the UCT Type II.

For the comparable items that caused the null hypothesis to be rejected, the UCT Type II had higher levels of disclosure for all the questions in the above categories. For the following questions *"I have had more than two sexual partners in the last three months*," "*I have had sex with a partner who was 10 or more years older than me at the time*," the UCT Type II obtained ***94%*** and ***54%*** respectively, whereas the ACASI obtained ***34%*** and ***20%*** across all the comparable questions.

"I am HIV positive," "*I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*" and "*I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection*," the UCT Type II obtained ***76%***, ***30%*** and ***14%*** respectively, whereas the ACASI had ***6%***, ***15%*** and ***2%*** respectively.

In terms of transactional sex and coercive sex, this study obtained the following findings in terms of the UCT Type II and ACASI. For transactional sex items used in this study, "*I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes)*," and "*I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics)*," the UCT Type II obtained ***38%*** and ***100%***of disclosures respectively, whereas the ACASI obtained ***11%*** for both. The coercive sex items included, "*I have been forced to have sex*," "*I have forced someone to have sex with me*," "*I have raped someone*" and "*I have raped someone together with one or more of my friends*," the UCT Type II obtained ***60%***, ***86%***, ***94%*** and ***22%*** respectively and the ACASI obtained ***7%***, ***7%***, ***2%*** and ***3%*** respectively.

The questions under the section on sex under intoxication, "*I have had sex with someone when I was so drunk that I do not remember it*," "*I have had sexual intercourse when so under the influence of alcohol that I was unable to consent*" and "*I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol*," the

UCT Type II obtained ***38%***, ***76%*** and ***68%*** of disclosures respectively and the ACASI obtained ***15%***, ***16%*** and ***25%*** respectively.

5.7.5 SRQ/ UCT Type II

For the SRQ and the UCT Type II, the null hypothesis was rejected for all the questions that were comparable in the study, except for two questions, "*I regret having had sex*" which was on par with a total of ***34%*** of participants endorsing this item across the SRQ and the UCT Type II. The other question which failed to reject the null hypothesis was, "*I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*" which was endorsed by ***30%*** in the UCT Type II and ***20%*** in the SRQ.

For the comparable items that caused the null hypothesis to be rejected, the UCT Type II performed substantially better across all the questions in the above categories. For the general risky sexual behaviour category *"I have had more than two sexual partners in the last three months*," "*I have had sex with a partner who was 10 or more years older than me at the time*," the UCT Type II obtained ***94%*** and ***54%*** respectively, whereas the SRQ obtained ***25%*** and ***26%*** across all the comparable questions.

In the unprotected sex category, the questions include, *"I am HIV positive*," and "*I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection*," the UCT Type II obtained ***76%*** and ***14%*** respectively, whereas the SRQ had ***4%*** and ***5%*** respectively.

In terms of transactional sex and coercive sex, this study obtained the following findings in terms of the UCT Type II and SRQ. For transactional sex items used in this study, "*I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes)*," and "*I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics)*," the UCT Type II obtained ***38%*** and ***100%***of disclosures respectively, whereas the SRQ obtained ***14%*** and ***11%*** for both respectively. The coercive sex items included, "*I have been forced to have sex*," "*I have forced someone to have sex with me*," "*I have raped someone*" and "*I have raped someone together with one or more of my friends*," the UCT Type II obtained ***60%***, ***86%***, ***94%*** and ***22%*** respectively and the SRQ obtained ***11%***, ***11%***, ***2%*** and ***2%*** respectively.

The questions under the section on sex under intoxication, "*I have had sex with someone when I was so drunk that I do not remember it*," "*I have had sexual intercourse when so under the influence of alcohol that I was unable to consent*" and "*I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol*," the UCT Type II obtained ***38%***, ***76%*** and ***68%*** of disclosures respectively and the SRQ obtained ***13%***, ***12%*** and ***24%*** respectively. Again higher levels of disclosure should be interpreted with caution.

5.7.6 UCT Type I/ UCT Type II

In terms of the pair wise comparisons with the UCT type I and Type II all comparable questions resulted in the null hypothesis being rejected. The difference emerged with the UCT Type II being significantly better than the UCT Type I. The UCT Type I, however was able to achieve higher rates of disclosures in two of the above questions, "*I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*" and "*I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes)*" which was endorsed by ***74%*** and ***64%*** of participants in the UCT Type I and by ***30%*** and ***38%*** respectively in the UCT Type II.

In the general risky behaviour category, the UCT type II achieved significantly higher rates of disclosure for the two comparable questions, "*I have had more than two sexual partners in the last three months*," and "*I have had sex with a partner who was 10 or more years older than me at the time*" achieving ***94%*** and ***54%***of disclosures respectively, the UCT Type I achieved ***8%*** and ***4%*** respectively.

In the unprotected sex category, the UCT Type II achieved the following percentage of disclosures for the following question, "*I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection*," the UCT Type achieved ***14%*** whilst the UCT Type I achieved ***0%***of disclosures. In terms of transactional sex, the UCT Type II achieved 100% disclosures for the item, "*I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics)*," while the UCT Type I achieved ***86%***. For coercive sex the following comparable items, "*I have forced someone to have sex with me*" and "*I have raped someone*," the UCT Type II achieved ***86%*** and ***94%*** respectively, while the UCT Type I achieved ***38%*** and

64% respectively. Sex under intoxication, achieved ***68%***of disclosures for the item, "*I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol*," and the UCT Type I achieved only ***8%***of disclosures. Higher levels of disclosure should be interpreted with caution. These results are also presented in the following three tables, table 5.14, 5.15 and 5.16.

Table 5.14: Percentages of disclosures

Questions	Survey Mode Proportions			
	ACASI	SRQ	UCT I	UCT II
I am HIV positive	6%	4%	***1.36***	76%
I have been forced to have sex	7%	11%	***-.44***	60%
I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes)	11%	14%	64%	38%
I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).	15%	20%	74%	30%
I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted	31%	45%	***-.72***	***1.12***
I have forced someone to have sex with me	70%	11%	38%	86%
I have had more than two sexual partners in the last three months	34%	25%	80%	94%
I have had sex with a partner who was 10 or more years older than me at the time	20%	26%	4%	54%
I have had sex with a teacher or lecturer	11%	6%	0%	***-0.12***
I have had sex with someone when I was so drunk that I do not remember it	15%	13%	***1.78***	38%
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%	100%
I have had sexual intercourse when so under the influence of alcohol that I was unable to consent	16%	12%	***-0.5***	76%

I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol	25%	24%	8%	68%
I have had to slap, kick or bite someone to stop them from having sex with me	13%	14%	10%	-0.22
I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection	2%	5%	0%	14%
I have raped someone	2%	2%	64%	94%
I have raped someone together with one or more of my friends	3%	2%	-.62	22%
I have refused to use a condom	13%	12%	22%	1.62
I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them	17%	20%	80%	-0.12
I regret having had sex	34%	34%	-.48	34%

5.8 Survey Mode Results

Below are p-values and z-scores obtained from the WINKS SDA. The Pairwise tests of comparisons of proportions tests each method against the other. Based on the p-values and z-scores obtained the hypotheses could either be accepted or rejected. Comparisons displaying a blank cell could not be conducted as the UCTs' contained negative proportions or proportions that were greater than 1. The following pairwise comparisons were conducted:

Table 5.15: Z-scores and p-values across all methods

Questions	Winks Hypotheses					
	ACASI/ SRQ	ACASI/ UCT I	SRQ/ UCT I	ACASI/ UCT II	SRQ/ UCT II	UCT I /UCT II
I am HIV positive	z = 0.665 p = 0.506			z = -10.22 p = 0.0	z = -10.559 p = 0.0	
I have been forced to have sex	z = 1.013			z = -8.076	z = -7.357	

	p = 0.311			p = 0.0	p = 0.0	
I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes)	z = 0.657 p = 0.511	z = -7.863 p = 0.0	z = -7.358 p = 0.0	z = -4.514 p = 0.0	z = -3.93 p = 0.0	z = 3.678 p = 0.0
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 = -8.511 p = 0.0	z = -7.75 p = 0.0	z = -2.578 p = 0.01	z = -1.655 p = 0.098	z = 6.228 p = 0.0
I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted	z = 2.09 p = 0.037					
I have forced someone to have sex with me	z = 1.013 p = 0.311	z = -5.345 p = 0.0	z = -4.514 p = 0.0	z = -11.353 p = 0.0	z = -10.748 p = 0.0	z = -6.993 p = 0.0
I have had more than two sexual partners in the last three months	z = -1.43 p = 0.153	z = -6.64 p = 0.0	z = -7.878 p = 0.0	z = -8.907 p = 0.0	z = -10.028 p = 0.0	z = -2.944 p = 0.003
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 = 3.499 p = 0.0	z = 4.377 p = 0.0	z = -5.052 p = 0.0	z = -4.096 p = 0.0	z = -7.792 p = 0.0
I have had sex with a teacher or lecturer	z = -1.299	z = 3.414 p =	z = 2.488			

	p = 0.194	0.001	p = 0.013			
I have had sex with someone when I was so drunk that I do not remember it	z = -0.418 p = 0.676			z = -3.743 p = 0.0	z = -4.121 p = 0.0	
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 = -0.835 p = 0.403	z = -10.748 p = 0.0	z = -12.789 p = 0.0	z = -12.789 p = 0.0	z = -3.88 p = 0.0
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 = -8.627 p = 0.0	z = -9.246 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 = 3.261 p = 0.001	z = 3.108 p = 0.002	z = -6.175 p = 0.0	z = -6.324 p = 0.0	z = -8.741 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 = 0.672 p = 0.501	z = 0.879 p = 0.379			
I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection	z = 1.183 p = 0.237	z = 1.422 p = 0.155	z = 2.265 p = 0.024	z = -3.192 p = 0.001	z = -2.208 p = 0.027	z = -3.88 p = 0.0
I have raped someone	z = 0.0	z = -	z = -	z = -	z = -	z = -

	p = 1.0	**9.493** **p = 0.0**	**9.493** **p = 0.0**	**13.194** **p = 0.0**	**13.194** **p = 0.0**	**5.208** **p = 0.0**
I have raped someone together with one or more of my friends	**z = -0.464** **p = 0.642**			**z = -4.145** **p = 0.0**	**z = -4.444** **p = 0.0**	
I have refused to use a condom	**z = -0.219** **p = 0.826**	**z = -1.699** **p = 0.089**	**z = -1.911** **p = 0.056**			
I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them	**z = 0.56** **p = 0.575**	**z = -9.027** **p = 0.0**	**z = -8.589** **p = 0.0**			
I regret having had sex	**z = 0.0** **p = 1.0**			**z = 0.0** **p = 1.0**	**z = 0.0** **p = 1.0**	

Based on the above obtained z-scores and p-values, the following hypotheses were tested using WINKS as discussed above:

$H_{0:}$ There is no significant difference between (method1) and (method2)

H_1: There is a significant difference between (method1) and (method2)

Below are the results of the hypotheses testing, in terms of either accepting or rejecting the null hypothesis. Columns stating "**accept**" ***mean the null hypothesis has been accepted, there is no difference between the methods***, and columns stating "**reject**" ***mean the null hypothesis has been rejected and a difference between the methods exist***. The columns that are blank include analyses that could not be carried out because of negative proportions or proportions greater than 1 (See Appendix 7).

Table 5.16: Table of hypotheses across all methods

Questions	Hypotheses					
	ACASI/ SRQ	ACASI/ UCT I	SRQ/ UCT I	ACASI/ UCT II	SRQ/ UCT II	UCT I /UCT II
I am HIV positive	Accept			Reject	Reject	
I have been forced to have sex	Accept			Reject	Reject	
I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes)	Accept	Reject	Reject	Reject	Reject	Reject
I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).	Accept	Reject	Reject	Reject	Accept	Reject
I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted	Reject					
I have forced someone to have sex with me	Accept	Reject	Reject	Reject	Reject	Reject
I have had more than two sexual partners in the last three months	Accept	Reject	Reject	Reject	Reject	Reject
I have had sex with a partner who was 10 or more years older than me at the time	Accept	Reject	Reject	Reject	Reject	Reject
I have had sex with a teacher or lecturer	Accept	Reject	Reject			
I have had sex with someone when I was so drunk that I do not remember it	Accept			Reject	Reject	

I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics)	**Accept**	**Reject**	**Reject**	**Reject**	**Reject**	**Reject**
I have had sexual intercourse when so under the influence of alcohol that I was unable to consent	**Accept**			**Reject**	**Reject**	
I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol	**Accept**	**Reject**	**Reject**	**Reject**	**Reject**	**Reject**
I have had to slap, kick or bite someone to stop them from having sex with me	**Accept**	**Accept**	**Accept**			
I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection	**Accept**	**Accept**	**Reject**	**Reject**	**Reject**	**Reject**
I have raped someone	**Accept**	**Reject**	**Reject**	**Reject**	**Reject**	**Reject**
I have raped someone together with one or more of my friends	**Accept**			**Reject**	**Reject**	
I have refused to use a condom	**Accept**	**Accept**	**Accept**			
I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them	**Accept**	**Reject**	**Reject**			
I regret having had sex	**Accept**			**Accept**	**Accept**	

5.9 Social Desirability Results

Table 5.16: Reliability Statistics for Social Desirability

Reliability Statistics	
Cronbach's Alpha	N of Items
.223	3

A reliability test was conducted and the reliability statistic (Cronbach's Alpha) for Hays 5 Item social desirability scale as can be seen above is .223 which is significantly lower than the normal expected .7 or higher. However the small nature of the scale, that is it only consists of 5 items, might explain the reliability statistic. The results obtained for reliability indicate that our reliability for our five item social desirability scale is problematic in terms of it being significantly lower than expected (See Appendix 8).

Table 5.17: ANOVA Results for Social Desirability

Multiple Comparisons

Dependent Variable: Percentages

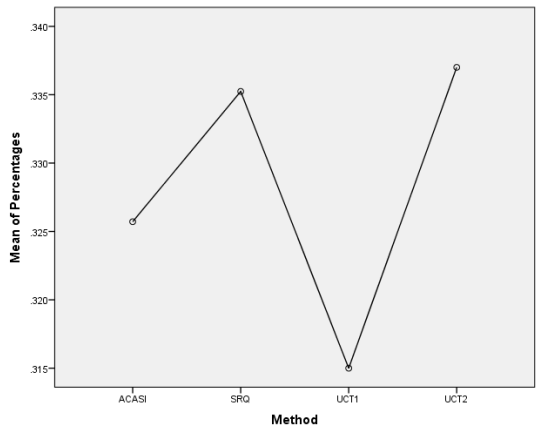
LSD

(I) Method	(J) Method	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
ACASI	SRQ	-.00952	.03903	.807	-.0862	.0671
	UCT1	.01071	.03408	.753	-.0562	.0776
	UCT2	-.01129	.03408	.741	-.0782	.0556
SRQ	ACASI	.00952	.03903	.807	-.0671	.0862
	UCT1	.02024	.03408	.553	-.0467	.0872
	UCT2	-.00176	.03408	.959	-.0687	.0652
UCT1	ACASI	-.01071	.03408	.753	-.0776	.0562
	SRQ	-.02024	.03408	.553	-.0872	.0467
	UCT2	-.02200	.02828	.437	-.0775	.0335
UCT2	ACASI	.01129	.03408	.741	-.0556	.0782
	SRQ	.00176	.03408	.959	-.0652	.0687

UCT1	.02200	.02828	.437	-.0335	.0775

The ANOVA showed no significant differences across all methods as can be seen above. The sig value for between groups comparison (combined) was .873 which is greater than alpha (.05) and this means that we fail to reject the null hypothesis, which is that all the group means for social desirability bias are all equal and conclude that there are no differences in terms of the means obtained for social desirability bias across the methods. That is, there is insufficient evidence to claim that some of the means may be different from each other.We also find that the *p value* for homogeneity of variance is .445 and because the *p value* is greater than the alpha level, we fail to reject the null hypothesis implying that there is little evidence that the variances are not equal and the homogeneity of variance assumption may be reasonably satisfied (See Appendix 8). Graph obtained for social desirability from the ANOVA conducted:

Figure 6.2: Social Desirability



5.10 Experience of Participation Results

Anova Results for Experience of Participation

Table 5.18: Reliability Statistics for Experience of Participation

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha	N of Items

	Based on Standardized Items	
.195	.539	3

A reliability test was conducted for experience of participation and the reliability statistic (Cronbach's Alpha) for experience of participation as can be seen above is .195 which is significantly lower than the normal expected .7 or higher, however due to the small nature of the scale, that is it only consists of 9 items the reliability statistic can be expected. The results obtained for reliability also indicate that the 9 item scale is problematic in terms of them being significantly lower than expected (See Appendix 9).

Table 5.19: ANOVA Results for Experience of Participation

Multiple Comparisons

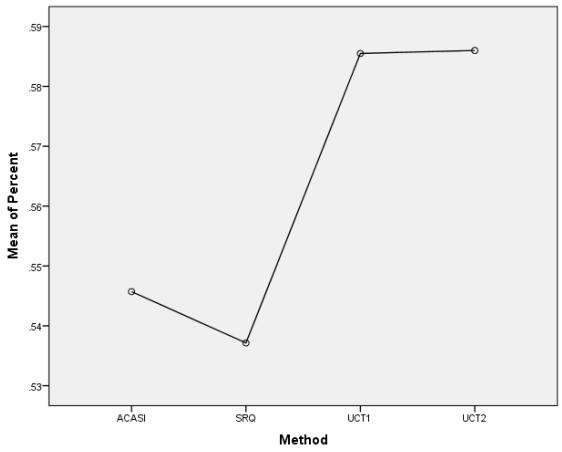
Dependent Variable: Percent

LSD

(I) Method	(J) Method	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
ACASI	SRQ	.00857	.04672	.855	-.0832	.1003
	UCT1	-.03979	.04080	.330	-.1199	.0403
	UCT2	-.04029	.04080	.324	-.1204	.0398
SRQ	ACASI	-.00857	.04672	.855	-.1003	.0832
	UCT1	-.04836	.04080	.236	-.1285	.0318
	UCT2	-.04886	.04080	.232	-.1290	.0313
UCT1	ACASI	.03979	.04080	.330	-.0403	.1199
	SRQ	.04836	.04080	.236	-.0318	.1285
	UCT2	-.00050	.03385	.988	-.0670	.0660
UCT2	ACASI	.04029	.04080	.324	-.0398	.1204
	SRQ	.04886	.04080	.232	-.0313	.1290
	UCT1	.00050	.03385	.988	-.0660	.0670

The ANOVA showed no significant differences across all methods as can be seen above. The sig value for between groups comparison (combined) was .495 which is greater than alpha (.05) and this means that we fail to reject the null hypothesis, which is that all the group means for social desirability bias are all equal and conclude that there are no differences in terms of the means obtained for social desirability bias across the methods. That is, there is insufficient evidence to claim that some of the means may be different from each other.However, we find that the *p value* for homogeneity of variance is .013 and because the *p value* is less than the alpha level, we fail to reject the null hypothesis implying that there is little evidence that the variances are not equal and the homogeneity of variance assumption may be reasonably unsatisfied (See Appendix 9). Graph obtained for experience of participation from the ANOVA conducted:

Figure 6.3: Experience of participation



Chapter 6

6.1 Discussion

The results of the norming study and experimental study were presented above. Here, the results for both parts of this study, namely the norming study and the experimental study, will be discussed in some detail with an attempt to explain the findings by drawing on literature and the statistics obtained as part of the rates of disclosure for each method.

6.1.1Norming Study

Factor analysis was conducted for all 186 items. Varimax rotation was used and all items scoring below 0.4 were suppressed. Sensitive and non-sensitive items that correlate at 0.4 or higher were used in this study and items that correlated below 0.4 were omitted. Items with a high correlation were selected for inclusion in the modes of survey. Sensitive and non-sensitive items were needed for inclusion in all the survey modes as explained above.

As discussed in the results section some items that were better suited for inclusion in the UCT Type II did not make the list of seventy-one items that were used in the experimental study. One explanation for this lies in the length of the questionnaire, participants were asked to rate 186 items in the norming study, fatigue could have been a possible cause in terms of participants paying less attention to these items and rating them on a lower scale despite the counter balanced design. As discussed above in the data collection section, the counterbalanced design ensured that four versions of the same questionnaire were being handed out to participants.

This ensured that all the questions featured in a different order. It could also have been the result of participants having a lack of understanding in terms of what was expected of them, even though the instructions featured at the top of each page, participants may have started off by rating the items in terms of sensitivity and then proceeded to treat the items as true and false for them. The other possibility lies in the participants' perceptions of our question on sensitivity. Participants were not asked directly on sensitivity but were rather asked whether they saw the behaviour in question as so sensitive that they would not want anyone else to know about it.

The way in which the question was phrased could have been problematic for participants. Sensitivity and non-sensitivity are treated as commonsensical terms with a common and highly general understanding. Even though there is some level of agreement in terms of sensitivity and non-sensitivity, the discrepancies in our finding can be explained in terms of our sample and their understanding of the behaviours in question. Even though one may ask if the results could have been different had the question posed been phrased differently, our results of the norming study have managed to still shed light on sensitive behaviours in relation to risky

sexual behaviors such as coercive sex, transactional sex and sex under the influence of alcohol, rape, multiple partners and general risky sexual behaviours. It also gave rise to questions that could be included in the UCT Type II and confirmed the non-sensitive items as can be seen in the results section reviewed above. Thereby, we can confidently conclude that the norming study served its purpose and assisted with the structuring of the modes of survey used in the experimental study, namely, the ACASI, SRQ and the UCT type I and II.

6.1.2 Experimental Study

This experimental study found significant differences in terms of the rates of disclosure, particularly in terms of the UCT Type II. This study found no significant differences in terms of the base rate estimates for social desirability and experience of participation across all the methods. A more in-depth discussion on these results will be undertaken below in terms of the behaviours researched, the modes of survey used, namely the ACASI, SRQ and UCT Types I and II, and the social desirability and experience of participation scales used.

6.1.2.1 Modes of Survey

A total of seventy-one items were presented to each participant in each of the modes of survey investigated in this study.The items were split into three categories, sensitive, non-sensitive related and non-sensitive unrelated behaviours as explained above in the results section. The results show interesting differences between the four methods in terms of the domains of sensitivity which are of interest to us. The domains of sensitivity include risky sexual behaviour and sex under intoxication. The modes of survey were administered via a computer based medium. It has also been found that computerized interviewing can provide conditions such as privacy and the perception of anonymity, that facilitate reliable and honest reporting, thereby increasing reports of sensitive behaviour in surveys of the general population (Van der Elst et al. 2008).

Firstly between the ACASI and SRQ minimal differences were found. The z-scores and p-values obtained showed that there were little to no significant differences in terms of the rates of disclosure obtained between the two methods. Only one question resulted in the hypothesis being rejected, meaning that a significant

difference between these methods did exist. For this particular question, "*I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted*," 45% of participants endorsed this item in the SRQ and 31% of people endorsed this item in the ACASI. The only other two questions that contained endorsements higher than 30% were the questions, *"I have had more than two sexual partners in the last three months*," and "*I regret having had sex*" which were endorsed by 34% in the ACASI for the first question and 25% in the SRQ, the second question was endorsed by 34% of participants for both techniques. The other sensitive questions used in this study had endorsements that ranged from 2% to 26%.

No extreme reporting was experienced for these two techniques as opposed to the UCT Types I and II in terms of having obtained rates of disclosure that were extremely close to 100%. It had been expected that the ACASI would perform significantly better than the SRQ as the ACASI is known to significantly reduce reporting bias and to have resulted in more reports of risk factors (Langhaug, Sherr & Cowan, 2010). However, due to the computerized nature of the study it is not surprising that there exist little differences in terms of the two since the only difference between the two techniques lies in one having an audio attached to it. Participants who responded to the ACASI were able to listen to the questions via a headset as opposed to having to read them of the screen. Apart from that there were no other differences present in the format between the ACASI and SRQ.

When comparing the ACASI and the SRQ with the UCT Type I and Type II as reviewed above in the results section we find that there were significantly higher rates of disclosure obtained for the UCT Type I and Type II in comparison to the ACASI and the SRQ. This sheds light on the nature of the UCT as a means of researching sensitive topics in comparison to more direct assessment techniques such as the ACASI and SRQ. Even though the ACASI is known to be a widely used method in enhancing rates of disclosure, the privacy and confidentiality boasted by the computerised nature of this study is further enhanced by the use of computerised UCT's.

As the UCT, provides participants with an opportunity to answer sensitive items without ever having to admit to a given behaviour, this seems to result in reducing

social desirability bias, increasing the response rates and providing greater anonymity than direct self-report measures (La Brie & Earleywine, 2000). This is important as it is argued (Dalton et al. 1994 ; La Brie & Earleywine, 2000) that the greater the amount of disclosure the more validity studies using these techniques will possess.As discussed above UCT's enhance a participant's sense of privacy and confidentiality by admitting to behaviours indirectly due to the structure of the UCT as discussed above in the research methods section.

Furthermore, a comparison between the UCT Type I and UCT Type II revealed that the UCT Type II had significantly higher rates of disclosure and slightly decreased un-analysable items due to negative proportions. Even though the UCT Type II has never been researched before, the very fact that the UCT Type II results are in keeping with the traditional UCT Type I results, is a promising factor in itself. This takes into consideration the suggestion made by Chaudhuri and Chrisdofides (2007), which suggests that totally unrelated items used in the traditional format of the UCT Type I, should be replaced with items related to the sensitive behaviour in question.

This results in the belief that the use of the related items used in the UCT Type II, resulted in the UCT Type II having significantly higher rates of disclosure and a slightly decreased amount of items that could not be analysed as compared to the UCT Type I. While we find the present evaluation of the UCTs to be promising, as we achieved significantly higher rates of disclosure for both the UCT Type I and Type II, it should be highlighted that the derived base rates are approximations (Dalton et al. 1994). We should not treat the percentages provided as exact measures of the behavior in question; however, we should acknowledge that the base rates obtained are better estimates than those provided by more conventional survey methods in this case the ACASI and SRQ (Dalton et al. 1994).

However, there is still some uncertainty in terms of the seven items that could not be analysed in the UCT Type I and the five items that could not be analysed in the UCT Type II. As mentioned previously, these items could not be compared due to having negative proportions or proportions greater than 1.

With this in mind, some problems experienced with the UCT's as mentioned above include negative proportions and proportions greater than 1, which resulted in some questions not being analysed. Thus, the many negative proportions, seven for the UCT Type I and five for the UCT Type II, obtained in this study's results called into question the effective performance of the UCT's. Obtaining negative proportions for the UCT results are not commonly reported in the literature and interpretation and understanding of such outcomes have not been widely researched. Dalton et al., (1994) has addressed this issue and has found that, what is important to the best possible performance of the UCT is strict randomisation and large sample sizes. This research made use of a sample of 610 participants which included 200 each for both the UCT type I and Type II. Form A was completed by 100 participants and Form B was also completed by a 100 participants. These sample sizes were well over the recommended limits of 40–50 participants per UCT condition (LaBrie & Earleywine, 2000).

Dalton et al., (1994) also states that negative estimates amount to poor comparability between the control and sensitive item groups, which has been a problem in this research for some of the questions, namely, *"I am HIV positive*," "*I have been forced to have sex*," "*I have had sex with someone when I was so drunk that I do not remember it*," "*I have had sexual intercourse when so under the influence of alcohol that I was unable to consent*," " *I have raped someone together with one or more of my friends*" and "*I regret having had sex*" which had problematic proportions. The UCT Type II experienced problematic proportions in terms of the following questions, "*I have had sex with a teacher or lecturer*," "*I have refused to use a condom*, "*I have had to slap, kick or bite someone to stop them from having sex with me*" and "*I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them*." The item, "*I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted*" was problematic for both the UCT Type I and II. Misrepresentation by or misunderstanding of respondents in terms of the questionnaire has also been found to impact on the overall performance of the UCT. Dalton et al., (1994) has also found the possibility that some respondents attempt to react against seeming to possibly endorse the sensitive item that they report zero for that response set, regardless of

their non-sensitive item counts, thereby lowering the overall base rate estimates of that dataset.

We also find that the seeming effortlessness of the reasoning of the UCT is affected by various factors, meaning that attempting to limit the analysis of UCT results to the difference in mean calculations is insufficient. Base rate estimates are easily altered in response to measurement error and where reliability of the non-sensitive item counts is low; an impact on measurement error can be expected (Dalton et al. 1994).

Had these items possessed positive proportions less than one, would this have resulted in the UCT I performing better?

Also if we followed Chaudhuri's and Christofides (2007), suggestion a little differently and used items that were more closely related such as "*felt ready the first time I had sex, Know where to buy condoms, Am comfortable receiving gifts from my sexual partner, am concerned about contracting a sexually transmitted disease, am comfortable with casual sex and first had sex between the ages of 14 and 18*," to name a few which scored below the ***.4*** mark and were left out, would this have resulted in better results?

6.1.2.2 Sample

Before proceeding to discuss the rates of disclosure of the behaviours in question, it seems noteworthy to discuss our sample for this study. The sample used is one known to feature highly in research, especially with regards to experimenting with sensitive and otherwise risky behaviours, as they are individuals who are known to be engaging in the most extensive identity exploration during emerging adulthood, which is the period from approximately ***18-25*** years of age rather than early adolescence (Roberts & Kennedy, 2006). We also know that for many young adults alcohol and drug use is closely linked to sexual decision-making and risk-taking. So whether our findings above and below has been exemplified by our sample, in an attempt to fake bad or whether our results are a true reflection that is being highlighted based on our sample, requires further investigation. Furthermore it must be remembered that the results obtained from the UCT's are mere estimates and need to be interpreted with caution.

6.1.2.3 Rates of Disclosure of Risky Behaviours

Research has found that in South Africa, casual sex, multiple concurrent partners and irregular condom use are known to be common sexual risk practices among adolescents and youth. In addition sexual debut was found to be significantly earlier, starting from less than 14 years of age, in 15.6% of black, 12.0% of coloured and 6.4% of white groups (Simbayi, Chauveau & Shisana, 2004). Sexually transmitted infections (STIs) acquired through unsafe sexual practices, which are also associated with increased risk of acquiring HIV and with increased infection of an individual to sexual partners, was present in 1.2% white, 3.2% coloured and 7.7% black learners who have had sex, reported having had an STI (Reddy et al. 2003).

Alcohol usage is linked with certain kinds of sexual activity. In South Africa substance usage is widespread among the population, where it is expected that 20% of women and 63% of men are suffering from substance use disorders (World Health Report, 2010). Furthermore, studies conducted in sub-Saharan Africa have found strong associations concerning substance usage and sexual risk behaviour. These sexual risk behaviours include, having multiple sex partners, having unprotected sex and engaging in sex for money and/or gifts (Morojele, Brook & Kachienga, 2006). Among sexually active young people, 36%; aged 15-24 say that drinking alcohol or using drugs has influenced their decisions about sex, ***29%*** of teens aged ***15-17*** and ***37%*** of young adults aged ***18-24***. ***29%*** of sexually active young people aged ***15-24*** say they have "done more" sexually than they had planned while drinking or using drugs (Roberts & Kennedy, 2006). A further ***23%*** of sexually active young people aged ***15-24*** report having had unprotected sex because they were consuming alcohol or using drugs, including ***12%*** of teens ***15-17*** years of age and ***25%*** of young adults aged ***18-24*** (Morojele et al. 2006).

This study found that between ***8%*** and ***68%*** of participants have had sex without a condom being used whilst under the influence of alcohol, between ***8%*** and ***94%*** of participants have had more than two sexual partners in the last three months, ***34%*** of participants regret having had sex, between ***15%*** and ***74%*** of participants have been treated for a sexually transmitted infection. Between ***11%*** and ***64%*** of participants have been in a sexual relationship in exchange for goods, between ***11%*** and ***100%***

have been in a sexual relationship because of things they have needed, between *2%* and *94%* of participants have raped someone and between *8%* and *20%* of participants have tried to get someone else intoxicated in the hope of having sexual intercourse with them as reviewed above in the results section. These are just some of the examples as can be seen above and have been reviewed in the results section, which highlight the consistencies in our finding with the literature reviewed above on risky sexual behaviours and the prevalence of it in terms of the sample used, namely university students between the ages of *18-26*.Some of these prevalence rates are extremely high and need to be interpreted with extreme caution as mentioned above. This is especially true when looking at the base rates obtained from the UCT, because these are approximations (Dalton et al. 1994). We should not treat the percentages provided as exact measures of the behavior in question; as alarming as a *100%* figure for transactional sex and a *94%* for raping someone figure is, we need to bear in mind that these are mere approximations of our samples rates of disclosure and there seems to be a gross case of over-reporting in light of the figures discussed above.

6.1.2.4 Social Desirability

Literature on social desirability bias has found that there is a known bias towards reporting of behaviours that might be seen as more socially desirable, and an equivalent tendency to avoid disclosures that might cause emotional distress, such as shame, remorse and embarrassment (Hays, Hayashi & Stewart, 1989). However, we also know that the sample used is one that is known to engage in risky pursuits. This research included the social desirability scale in the hope of identifying which method most mitigated social desirability bias for this particular population.

The results based on the reliability statistic and the ANOVA conducted, show no differences across the methods. Cronbachs alpha is very low for the 5 item social desirability scale(.364) for this study, in studies conducted by Hays, Hayashi and Stewart (1989) using the 5 item scale, internal consistency reliability of the scale was acceptable (Cronbach's alpha = .66 and .68 respectively).However, previous studies conducted on this campus with a similar focus also yielded a significantly low Cronbachs' alpha (.415) (Alledhan, 2007). In terms of the ANOVA the UCT Type II (.3370) had the highest mean, followed up by the SRQ (.3352), ACASI (.3257) and

then the UCT Type I (.3150) respectively. However these differences were not significant enough to cause the null hypothesis to be rejected.

Cronbachs alpha is low and we fail to find differences across all the methods in terms of the ANOVA conducted, therefore we conclude that there are no differences. Further investigation into the cause of this finding is necessary, as it has been found by Strahan and Garbasi, (1970), when reliability of a short form scale is low, the effect may be reversed and possibly showing the effect of the behaviour in question on social desirability rather than the effect of social desirability on responding. So while the results may seem disappointing in that there are no differences in social desirability responding between the modes of survey used, namely the ACASI, SRQ and the UCT type I and II. It brings to light future research that can be focused on, in terms of the effect of risky sexual behaviours on social desirability when utilizing the above mentioned techniques, rather than looking at which techniques has a higher base rate estimate for social desirability.

6.1.2.5 Experience of Participation

The results based on the reliability statistic and the ANOVA conducted; show no differences across the methods. Cronbachs alpha is significantly low for the 5 item social desirability scale. However, the reliability statistics did show differences in Cronbachs Alpha if the fourth and seventh items were to be deleted. These items were linked to participants' experiences in terms of the method. In terms of the ANOVA the UCT Type II (.5860) had the highest mean, followed up by the UCT Type I (.5855) , ACASI (.5457) and then the SRQ (.5371) respectively. However these differences were not significant enough to cause the null hypothesis in terms of the means to be rejected, but the null hypothesis relating to the variances were rejected across all the methods.

6.2 Implications for practical application

The results of this study shed light on the prevalence of risky sexual behaviour among university students and the ability of the above methods in obtaining data on sensitive topics. Collecting data on sensitive issues can be difficult as people are sometimes afraid of the consequences that could arise from admitting to such behaviours. Socially desirable answers can be produced as respondents attempt to

portray themselves in a socially acceptable manner (Gregson et al. 2004). On average a high number of students are involved in risky sexual behaviours ranging from unprotected sex, transactional sex, coercive sex and sex under the influence of intoxicants (Shaik, 2013).

These findings are highly problematic and have massive implications for the South African society, as risky sex can increase the likelihood of teenage pregnancy, as well as sexually transmitted infections including HIV and cause young people a range of adverse emotional, social and economic consequences. Prevention strategies and programmes need to be implemented at the university to lower the number of risky sexual practices that are occurring. In addition, support programmes are necessary to offer support to those students who are victims of coerced sex and rape. This research made use of rates of disclosure of sensitive behaviours as an analogue of validity. These rates of disclosure, however especially with regards to those that were extremely high need to be interpreted with extreme caution.

These extremely high rates of disclosure were mostly prevalent in the UCT Type I and II and could possibly be as a result of over-reporting. This in itself undermines the concept of using rates of disclosure as an analogue of validity, especially where studies produce figures that are mere approximations. In order to confidently report figures and analyse them in light of what is obtained from the methods and the participants, one needs to establish biological endpoints, or other external validity indices, like STD tests results, HIV test results, clinic reports, crime stats and so forth as a means of validating the rates of disclosure obtained. However, for many of these, we cannot always engage in costly biological endpoint tests. Therefore, research serves as an advantage in that through research information is obtained that could be used to inform and structure health interventions. Also with coercive sex and transactional sex, there are no external validity indicators and crime statistics only deal with the reported cases, and the difference between reported cases and those cases that go unreported is only amenable to this kind of research, therefore further refinement of the methodology is critical (Ghanem et al. 2005).

With regards to the research methods reviewed above especially with the implementation of the UCT type II, the following practical implications should be

considered over and above the suggestions made above in the discussion section. These are in accordance with the advice offered by Droitcour et al., (1991) which deals with ceiling effects which lead to negative proportions as discussed in the literature above and a lack of privacy protection have led to three generally accepted pieces of design advice for the UCT. Firstly, high prevalence non-sensitive items, which would increase the occurrence of ceiling effects, should be avoided (Droitcour et al. 1991).

While the UCT type I might have utilized these high prevalence items the UCT Type II made use of items that were somewhat related to the behaviour in question. However, this suggestion might still hold for a variation of the UCT Type I, namely the UCT Type II and it can then also be said that the related item should also not be high prevalence items since the UCT Type II also experienced the problem of having questions that could not be analysed. Second, low prevalence non-sensitive items should be avoided. If respondents are aware that all the non-sensitive items have low prevalence, they may become concerned about the level of privacy protection and underreport their answers. Again this can also be problematic for a UCT Type II especially in deciding the prevalence of behaviours that might otherwise be related to the sensitive behaviour in question. One needs to proceed with extreme caution in relation to the two factors, that is making use of high and low prevalence items. Third, lists should not be too short because short lists will also tend to increase the likelihood of ceiling effects (Droitcour et al. 1991). Both UCT Types I and II followed the traditional format of consisting of 5 items per dataset and containing an additional item per alternate set which was regarded as the sensitive behaviour in question.

Also while the social desirability and experience of participation results may seem disappointing, it brings to light Strahan and Garbasi (1970) suggestion, that future research should be focused on the effect of risky sexual behaviours on social desirability and in this case possibly the experience of participating in a risky behavior study when utilizing the above mentioned techniques, rather than looking at which techniques has a higher base rate estimate for social desirability and experience of participation. Also one could possible administer all the techniques to an individual and then administer a social desirability and experience of participation scale and then compare the results.

6.3 Limitations of the research

While the statistics obtained in this study are alarming in terms of the risky behaviours researched, one such limitation is our inability to confidently conclude that these rates of disclosure are in fact prevalence rates on campus, especially since these rates of disclosure are sometimes used as an analogue of validity. These figures need to be interpreted with extreme caution.The other limitation experienced by this study is the sample utilized. Majority of our sample were black females between the ages of 18-26. This makes it hard to generalize our finding across the context, namely university students and limits our findings in terms of what other race groups and genders could have experienced.

The other limitation of this study involves being able to confidently draw inferences about our results in terms of social desirability bias and experience of participation in terms of the modes of survey used, namely the ACASI, SRQ and UCT Types I and II. Further research into these limitations, which have also been highlighted and discussed in the above section, as well as taking into consideration the suggestions made above needs to be explored.

Chapter 7

7. Conclusion

This research was exploratory in nature. It aimed to present the findings from a sample of UKZN students, to highlight the challenges of research in this area, and to emphasise the need for further and better research to be conducted into the modes of survey used when researching sensitive or otherwise risky behaviours in the South African context. The foundation of this research study was the assumption that higher rates of disclosure to sensitive items indicates a greater degree of reliability and validity of the self-report delivery modes investigated, namely the ACASI, SRQ, UCT Type I and II.

The fundamental objectives of the study were to norm and scale a range of sensitive and non-sensitive (related and unrelated) behaviours, in terms of sensitivity for this population, namely university students, in the sensitivity domains of sex and intoxication. To discover which methods, the ACASI, UCT Type I, UCT Type II and

SRQ, yields the highest rates of disclosure as an analogue of validity (This is of utmost importance when considering criterion validity in studies that concern sensitive issues). To understand the participant's experiences of the different modes of survey and to compare group rates of social desirability across the methods investigated in this study, namely the ACASI, UCT Type I, UCT Type II and the SRQ.

The results show that the UCT methods, especially the UCT Type II contributed to the highest response rates to the sensitive items, compared to the ACASI and SRQ technique. The results of the study also provide observations into the occurrence of risky sexual encounters among the university students. The results convey an alarmingly high proportion of students are either victims of these behaviours or perpetrators of the behaviour. These results as emphasized above should be interpreted with extreme caution.

However, they do show promising results in terms of the UCT's ability to obtain higher estimates of sensitive behaviours and they also show promising results in terms of Chaudhuri and Christofides (2007) suggestion of including items in the UCT that are related to the behavior in question. This is however, subject to further research. The many negative consequences associated with these behaviours, especially those that affect health and mental well-being require further investigation. In order to develop and implement effective prevention and support programmes and awareness campaigns for the University of KwaZulu-Natal to better manage, assess and control this serious social problem.

8. References

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Appendix 1: Norming Study Information Sheet

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

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PhD:	Vernon Solomon	Solomon@ukzn.ac.za	033 2605680
PhD supervisor	Kevin Durrheim	Durrheim@ukzn.ac.za	

Appendix 2: Survey Modes information Sheet and Consent Form

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:
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PhD:	Vernon Solomon	Solomon@ukzn.ac.za	033 2605680
PhD supervisor	Kevin Durrheim	Durrheim@ukzn.ac.za	

Consent Form

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**

Appendix 3: Referral Letter

14 March 2013

To whom it may concern

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

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

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 Hyne 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:** ximbam@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

Appendix 4: Norming Study Questionnaire

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 example:

eating pizza	1	2	3	4
				X

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 5: Questionnaire Format

QUESTON ORDER

ACASI & SRQ

1. I use the internet from my cell phone.
2. I always use condoms when having sex.
3. I went to a private high school.
4. I am careful about risky sex.
5. I am HIV positive.
6. I am on Facebook.
7. I can drive quite well after two drinks.
8. I can speak more than 2 languages reasonably well.
9. I can type reasonably well.
10. I don’t drive when I have been drinking.
11. I don’t normally eat breakfast.
12. I drink alcohol in moderation.
13. I drink coffee.
14. I drink tea.
15. I have had the usual childhood illnesses.
16. I have allergies.
17. I have an internet connection at home.
18. I have been forced to have sex.
19. I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes).
20. I know what a “conversion” is in rugby.

21. I have been slightly drunk.

22. I have been tested for HIV.

23. I have been to Durban.

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

25. I have drunk alcohol.

26. I have engaged in light petting (kissing, fondling).

28. I have felt peer pressure to drink alcohol.

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

29. I subscribe to electronic newsletters.

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

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

32. I have gone to the chemist when sick.

33. I have gone to the doctor when sick.

34. I live with my family.

35. I have had diagnostic tests done in the last year.

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

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

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

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

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

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

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

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

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

45. I have often drunk alcohol.

46. I have raped someone.

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

48. I have refused to use a condom.

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

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

51. I have taken antibiotics in the last year.

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

53. I used a condom the last time I had sex.

54. I have watched the movie “Tsotsi”.

55. I know about the “morning after” pill.

56. I know my HIV status.

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

58. I know where to get condoms for free.

59. I know where to get the contraceptive pill.

60. I often watch television late at night.

61. I use the internet almost every week.

62. I own a laptop computer

63. I own at least one cell phone.

64. Reading is a hobby for me.

65. I regret having had sex.

66. I sometimes drink alcohol socially.

67. I take vitamins almost everyday.
68. I think sex is ok in a committed relationship.
69. I am at risk for HIV.
70. I watch the news on TV at least 3 times a week.
71. I am careful with my diet.

UCT INFO.

UCT Type I

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

UCT Type II

FORM A	**FORM B**
Set 1:	**Set 1:**

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

UCT TYPE I

Form A

Dataset 1

5. I am HIV positive.

Dataset 2

Dataset 3

18. I have been forced to have sex.

Dataset 4

Dataset 5

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

Dataset 6

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

Dataset 7

Dataset 8

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

Dataset 9

Dataset 10

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

Form B

Dataset 1

Dataset 2

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

Dataset 3

Dataset 4

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

Dataset 5

Dataset 6

Dataset 7

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

Dataset 8

Dataset 9

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

Dataset 10

Form C

Dataset 1

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

Dataset 2

Dataset 3

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

Dataset 4

Dataset 5

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

Dataset 6

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

Dataset 7

Dataset 8

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

Dataset 9

Dataset 10

46. I have raped someone.

Form D

Dataset 1

Dataset 2

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

Dataset 3

Dataset 4

48. I have refused to use a condom.

Dataset 5

Dataset 6

Dataset 7

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

Dataset 8

Dataset 9

65. I regret having had sex.

Dataset 10

UCT TYPE II

Form A

Dataset 1

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

Dataset 2

Dataset 3

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

Dataset 4

Dataset 5

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

Dataset 6

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

Dataset 7

Dataset 8

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

Dataset 9

Dataset 10

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

Form B

Dataset 1

Dataset 2

18. I have been forced to have sex.

Dataset 3

Dataset 4

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

Dataset 5

Dataset 6

Dataset 7

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

Dataset 8

Dataset 9

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

Dataset 10

Form C

Dataset 1

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

Dataset 2

Dataset 3

46. I have raped someone.

Dataset 4

Dataset 5

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

Dataset 6

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

Dataset 7

Dataset 8

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

Dataset 9

Dataset 10

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

Form D

Dataset 1

Dataset 2

65. I regret having had sex.

Dataset 3

Dataset 4

5. I am HIV positive.

Dataset 5

Dataset 6

Dataset 7

48. I have refused to use a condom.

Dataset 8

Dataset 9

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

Dataset 10

Appendix 6: Results

Norming Study Results

Rotated Component Matrix[a]

	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 really feel like doing it		.465
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.	

Appendix 7: Modes of Survey Results: Winks Analysis

Question 5 (I am HIV positive.)

SRQ/ACASI

```
Proportion(1) = 0.04                    n = 105
Proportion(2) = 0.06                    n = 105

   Difference between the two proportions = 0.02

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal
```

```
   z = -0.665     p = 0.506 (two tail)

   95% CI on the difference is (-0.039, 0.079)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

SRO/UCT II

```
Proportion(1) = 0.04                  n = 105
Proportion(2) = 0.76                  n = 100

   Difference between the two proportions = 0.72

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -10.559     p = 0.0 (two tail)

   95% CI on the difference is (0.586, 0.854)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

ACASI/UCT II

```
Proportion(1) = 0.06                  n = 105
Proportion(2) = 0.76                  n = 100

   Difference between the two proportions = 0.7

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -10.22     p = 0.0 (two tail)

   95% CI on the difference is (0.566, 0.834)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

Question 18 (I have been forced to have sex.)

SRO/ACASI

```
Proportion(1) = 0.11                  n = 105
Proportion(2) = 0.07                  n = 105

   Difference between the two proportions = 0.04

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 1.013     p = 0.311 (two tail)

   95% CI on the difference is (-0.037, 0.117)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

SRO/UCT II

```
Proportion(1) = 0.11                  n = 105
Proportion(2) = 0.6                   n = 100
```

```
   Difference between the two proportions = 0.49

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -7.357     p = 0.0 (two tail)

   95% CI on the difference is (0.359, 0.621)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

ACASI/UCT II

```
Proportion(1) = 0.07                  n = 105
Proportion(2) = 0.6                   n = 100

   Difference between the two proportions = 0.53

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -8.076     p = 0.0 (two tail)

   95% CI on the difference is (0.401, 0.659)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

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

SRO/ACASI

```
Proportion(1) = 0.14                  n = 105
Proportion(2) = 0.11                  n = 105

   Difference between the two proportions = 0.03

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 0.657     p = 0.511 (two tail)

   95% CI on the difference is (-0.059, 0.119)
```

A p-value greater than 0.05 suggests no evidence that the proportions are significantly different. (Do not reject the null hypothesis.)

SRO/UCT I

```
Proportion(1) = 0.14                  n = 105
Proportion(2) = 0.64                  n = 100

   Difference between the two proportions = 0.5

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -7.358     p = 0.0 (two tail)

   95% CI on the difference is (0.367, 0.633)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

ACASI/ UCT I

```
Proportion(1) = 0.11                    n = 105
Proportion(2) = 0.64                    n = 100

   Difference between the two proportions = 0.53

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -7.863     p = 0.0 (two tail)

   95% CI on the difference is (0.398, 0.662)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

SRQ/UCT II

```
Proportion(1) = 0.14                    n = 105
Proportion(2) = 0.38                    n = 100

   Difference between the two proportions = 0.24

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -3.93     p = 0.0 (two tail)

   95% CI on the difference is (0.12, 0.36)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

ACASI/UCT II

```
Proportion(1) = 0.11                    n = 105
Proportion(2) = 0.38                    n = 100

   Difference between the two proportions = 0.27

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -4.514     p = 0.0 (two tail)

   95% CI on the difference is (0.153, 0.387)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

UCT I/ UCT II

```
Proportion(1) = 0.64                    n = 100
Proportion(2) = 0.38                    n = 100

   Difference between the two proportions = 0.26

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 3.678     p = 0.0 (two tail)

   95% CI on the difference is (0.121, 0.399)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

Question 24 (I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)).

SRQ/ACASI

```
Proportion(1) = 0.2                   n = 105
Proportion(2) = 0.15                  n = 105

   Difference between the two proportions = 0.05

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 0.953     p = 0.34 (two tail)

   95% CI on the difference is (-0.053, 0.153)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

SRQ/UCT I

```
Proportion(1) = 0.2                   n = 105
Proportion(2) = 0.74                  n = 100

   Difference between the two proportions = 0.54

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -7.75     p = 0.0 (two tail)

   95% CI on the difference is (0.403, 0.677)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

ACASI/UCT I

```
Proportion(1) = 0.15                  n = 105
Proportion(2) = 0.74                  n = 100

   Difference between the two proportions = 0.59

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -8.511     p = 0.0 (two tail)

   95% CI on the difference is (0.454, 0.726)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

SRQ/UCT II

```
Proportion(1) = 0.2                   n = 105
Proportion(2) = 0.3                   n = 100
```

```
   Difference between the two proportions = 0.1

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -1.655     p = 0.098 (two tail)

   95% CI on the difference is (-0.018, 0.218)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

ACASI/UCT II

```
Proportion(1) = 0.15                  n = 105
Proportion(2) = 0.3                   n = 100

   Difference between the two proportions = 0.15

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -2.578     p = 0.01 (two tail)

   95% CI on the difference is (0.036, 0.264)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

UCT I/ UCT II

```
Proportion(1) = 0.74                  n = 100
Proportion(2) = 0.3                   n = 100

   Difference between the two proportions = 0.44

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 6.228     p = 0.0 (two tail)

   95% CI on the difference is (0.302, 0.578)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

Question 27 (I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted).

SRQ/ACASI

```
Proportion(1) = 0.45                  n = 105
Proportion(2) = 0.31                  n = 105

   Difference between the two proportions = 0.14

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 2.09     p = 0.037 (two tail)

   95% CI on the difference is (0.009, 0.271)

   A p-value less than 0.05 indicates that there is a significant difference in
```

proportions. (Evidence to reject the null hypothesis.)

Question 30 (I have forced someone to have sex with me).

SRQ/ACASI

```
Proportion(1) = 0.11                  n = 105
Proportion(2) = 0.07                  n = 105

   Difference between the two proportions = 0.04

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 1.013     p = 0.311 (two tail)

   95% CI on the difference is (-0.037, 0.117)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

SRQ/UCT I

```
Proportion(1) = 0.11                  n = 105
Proportion(2) = 0.38                  n = 100

   Difference between the two proportions = 0.27

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -4.514     p = 0.0 (two tail)

   95% CI on the difference is (0.153, 0.387)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

ACASI/UCT I

```
Proportion(1) = 0.07                  n = 105
Proportion(2) = 0.38                  n = 100

   Difference between the two proportions = 0.31

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -5.345     p = 0.0 (two tail)

   95% CI on the difference is (0.196, 0.424)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

SRQ/UCT II

```
Proportion(1) = 0.11                  n = 105
Proportion(2) = 0.86                  n = 100

   Difference between the two proportions = 0.75

   A test for Ho: The two proportion are equal
```

```
            Ha: The two proportion are not equal

   z = -10.748     p = 0.0 (two tail)

   95% CI on the difference is (0.613, 0.887)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

ACASI/UCT II

```
Proportion(1) = 0.07                  n = 105
Proportion(2) = 0.86                  n = 100

   Difference between the two proportions = 0.79

   A test for Ho: The two proportion are equal
            Ha: The two proportion are not equal

   z = -11.353     p = 0.0 (two tail)

   95% CI on the difference is (0.654, 0.926)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

UCT I/ UCT II

```
Proportion(1) = 0.38                  n = 100
Proportion(2) = 0.86                  n = 100

   Difference between the two proportions = 0.48

   A test for Ho: The two proportion are equal
            Ha: The two proportion are not equal

   z = -6.993     p = 0.0 (two tail)

   95% CI on the difference is (0.345, 0.615)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

Question 36 (I have had more than two sexual partners in the last three months).

SRO/ACASI

```
Proportion(1) = 0.25                  n = 105
Proportion(2) = 0.34                  n = 105

   Difference between the two proportions = 0.09

   A test for Ho: The two proportion are equal
            Ha: The two proportion are not equal

   z = -1.43     p = 0.153 (two tail)

   95% CI on the difference is (-0.033, 0.213)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

SRO/UCT I

```
Proportion(1) = 0.25                    n = 105
Proportion(2) = 0.8                     n = 100

   Difference between the two proportions = 0.55

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -7.878     p = 0.0 (two tail)

   95% CI on the difference is (0.413, 0.687)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

ACASI/UCT I

```
Proportion(1) = 0.34                    n = 105
Proportion(2) = 0.8                     n = 100

   Difference between the two proportions = 0.46

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -6.64     p = 0.0 (two tail)

   95% CI on the difference is (0.324, 0.596)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

SRQ/UCT II

```
Proportion(1) = 0.25                    n = 105
Proportion(2) = 0.94                    n = 100

   Difference between the two proportions = 0.69

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -10.028     p = 0.0 (two tail)

   95% CI on the difference is (0.555, 0.825)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

ACASI/UCT II

```
Proportion(1) = 0.34                    n = 105
Proportion(2) = 0.94                    n = 100

   Difference between the two proportions = 0.6

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -8.907     p = 0.0 (two tail)

   95% CI on the difference is (0.468, 0.732)

   A p-value less than 0.05 indicates that there is a significant difference in
```

proportions. (Evidence to reject the null hypothesis.)

UCT I/ UCT II

Proportion(1) = 0.8 n = 100
Proportion(2) = 0.94 n = 100

Difference between the two proportions = 0.14

A test for Ho: The two proportion are equal
Ha: The two proportion are not equal

z = -2.944 p = 0.003 (two tail)

95% CI on the difference is (0.047, 0.233)

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

Question 37 (I have had sex with a partner who was 10 or more years older than me at the time).

SRQ/ACASI

Proportion(1) = 0.26 n = 105
Proportion(2) = 0.2 n = 105

Difference between the two proportions = 0.06

A test for Ho: The two proportion are equal
Ha: The two proportion are not equal

z = 1.033 p = 0.301 (two tail)

95% CI on the difference is (-0.054, 0.174)

A p-value greater than 0.05 suggests no evidence that the proportions are significantly different. (Do not reject the null hypothesis.)

SRQ/UCT I

Proportion(1) = 0.26 n = 105
Proportion(2) = 0.04 n = 100

Difference between the two proportions = 0.22

A test for Ho: The two proportion are equal
Ha: The two proportion are not equal

z = 4.377 p = 0.0 (two tail)

95% CI on the difference is (0.121, 0.319)

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

ACASI/UCT I

Proportion(1) = 0.2 n = 105
Proportion(2) = 0.04 n = 100

Difference between the two proportions = 0.16

A test for Ho: The two proportion are equal

```
            Ha: The two proportion are not equal

   z = 3.499     p = 0.0 (two tail)

   95% CI on the difference is (0.07, 0.25)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

SRQ/UCT II

```
Proportion(1) = 0.26                  n = 105
Proportion(2) = 0.54                  n = 100

   Difference between the two proportions = 0.28

   A test for Ho: The two proportion are equal
            Ha: The two proportion are not equal

   z = -4.096     p = 0.0 (two tail)

   95% CI on the difference is (0.146, 0.414)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

ACASI/UCT II

```
Proportion(1) = 0.2                   n = 105
Proportion(2) = 0.54                  n = 100

   Difference between the two proportions = 0.34

   A test for Ho: The two proportion are equal
            Ha: The two proportion are not equal

   z = -5.052     p = 0.0 (two tail)

   95% CI on the difference is (0.208, 0.472)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

UCT I/ UCT II

```
Proportion(1) = 0.04                  n = 100
Proportion(2) = 0.54                  n = 100

   Difference between the two proportions = 0.5

   A test for Ho: The two proportion are equal
            Ha: The two proportion are not equal

   z = -7.792     p = 0.0 (two tail)

   95% CI on the difference is (0.374, 0.626)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

Question 38 (I have had sex with a teacher or lecturer).

SRQ/ACASI

```
Proportion(1) = 0.06                    n = 105
Proportion(2) = 0.11                    n = 105

   Difference between the two proportions = 0.05

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -1.299     p = 0.194 (two tail)

   95% CI on the difference is (-0.025, 0.125)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

SRQ/UCT I

```
Proportion(1) = 0.06                    n = 105
Proportion(2) = 0.0                     n = 100

   Difference between the two proportions = 0.06

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 2.488     p = 0.013 (two tail)

   95% CI on the difference is (0.013, 0.107)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

ACASI/UCT I

```
Proportion(1) = 0.11                    n = 105
Proportion(2) = 0.0                     n = 100

   Difference between the two proportions = 0.11

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 3.414     p = 0.001 (two tail)

   95% CI on the difference is (0.047, 0.173)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

Question 39 (I have had sex with someone when I was so drunk that I do not remember it).

SRQ/ACASI

```
Proportion(1) = 0.13                    n = 105
Proportion(2) = 0.15                    n = 105

   Difference between the two proportions = 0.02

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -0.418     p = 0.676 (two tail)

   95% CI on the difference is (-0.074, 0.114)
```

A p-value greater than 0.05 suggests no evidence that the proportions are significantly different. (Do not reject the null hypothesis.)

SRQ/UCT II

```
Proportion(1) = 0.13                  n = 105
Proportion(2) = 0.38                  n = 100

   Difference between the two proportions = 0.25

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -4.121     p = 0.0 (two tail)

   95% CI on the difference is (0.131, 0.369)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

ACASI/UCT II

```
Proportion(1) = 0.15                  n = 105
Proportion(2) = 0.38                  n = 100

   Difference between the two proportions = 0.23

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -3.743     p = 0.0 (two tail)

   95% CI on the difference is (0.11, 0.35)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

Question 40 (I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics)).

SRQ/ACASI

```
Proportion(1) = 0.11                  n = 105
Proportion(2) = 0.11                  n = 105

   Difference between the two proportions = 0.0

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 0.0     p = 1.0 (two tail)

   95% CI on the difference is (-0.085, 0.085)
```

A p-value greater than 0.05 suggests no evidence that the proportions are significantly different. (Do not reject the null hypothesis.)

SRQ/UCT I

```
Proportion(1) = 0.11                  n = 105
Proportion(2) = 0.86                  n = 100

   Difference between the two proportions = 0.75
```

A test for Ho: The two proportion are equal
Ha: The two proportion are not equal

z = -10.748 p = 0.0 (two tail)

95% CI on the difference is (0.613, 0.887)

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

ACASI/UCT I

Proportion(1) = 0.11 n = 105
Proportion(2) = 0.86 n = 100

Difference between the two proportions = 0.75

A test for Ho: The two proportion are equal
Ha: The two proportion are not equal

z = -10.748 p = 0.0 (two tail)

95% CI on the difference is (0.613, 0.887)

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

ACASI/UCT II

Proportion(1) = 0.11 n = 105
Proportion(2) = 1.0 n = 100

Difference between the two proportions = 0.89

A test for Ho: The two proportion are equal
Ha: The two proportion are not equal

z = -12.789 p = 0.0 (two tail)

95% CI on the difference is (0.754, 1.026)

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

SRQ/UCT II

Proportion(1) = 0.11 n = 105
Proportion(2) = 1.0 n = 100

Difference between the two proportions = 0.89

A test for Ho: The two proportion are equal
Ha: The two proportion are not equal

z = -12.789 p = 0.0 (two tail)

95% CI on the difference is (0.754, 1.026)

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

UCT I/UCT II

```
Proportion(1) = 0.86                    n = 100
Proportion(2) = 1.0                     n = 100

   Difference between the two proportions = 0.14

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -3.88     p = 0.0 (two tail)

   95% CI on the difference is (0.069, 0.211)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

Question 41 (I have had sexual intercourse when so under the influence of alcohol that I was unable to consent).

SRQ/ACASI

```
Proportion(1) = 0.12                    n = 105
Proportion(2) = 0.16                    n = 105

   Difference between the two proportions = 0.04

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -0.835     p = 0.403 (two tail)

   95% CI on the difference is (-0.054, 0.134)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

ACASI/UCT II

```
Proportion(1) = 0.16                    n = 105
Proportion(2) = 0.76                    n = 100

   Difference between the two proportions = 0.6

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -8.627     p = 0.0 (two tail)

   95% CI on the difference is (0.464, 0.736)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

SRQ/UCT II

```
Proportion(1) = 0.12                    n = 105
Proportion(2) = 0.76                    n = 100

   Difference between the two proportions = 0.64

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -9.246     p = 0.0 (two tail)
```

```
   95% CI on the difference is (0.504, 0.776)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

Question 42 (I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol).

SRO/ACASI

```
Proportion(1) = 0.24                  n = 105
Proportion(2) = 0.25                  n = 105

   Difference between the two proportions = 0.01

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -0.168     p = 0.866 (two tail)

   95% CI on the difference is (-0.106, 0.126)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

SRO/UCT

```
Proportion(1) = 0.24                  n = 105
Proportion(2) = 0.08                  n = 100

   Difference between the two proportions = 0.16

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 3.108     p = 0.002 (two tail)

   95% CI on the difference is (0.059, 0.261)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

ACASI/UCT

```
Proportion(1) = 0.25                  n = 105
Proportion(2) = 0.08                  n = 100

   Difference between the two proportions = 0.17

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 3.261     p = 0.001 (two tail)

   95% CI on the difference is (0.068, 0.272)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

ACASI/UCT II

```
Proportion(1) = 0.25                  n = 105
Proportion(2) = 0.68                  n = 100
```

```
   Difference between the two proportions = 0.43

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -6.175     p = 0.0 (two tail)

   95% CI on the difference is (0.294, 0.566)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

SRQ/UCT II

```
Proportion(1) = 0.24                  n = 105
Proportion(2) = 0.68                  n = 100

   Difference between the two proportions = 0.44

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -6.324     p = 0.0 (two tail)

   95% CI on the difference is (0.304, 0.576)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

UCT I/ UCT II

```
Proportion(1) = 0.08                  n = 100
Proportion(2) = 0.68                  n = 100

   Difference between the two proportions = 0.6

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -8.741     p = 0.0 (two tail)

   95% CI on the difference is (0.465, 0.735)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

Question 43 (I have had to slap, kick or bite someone to stop them from having sex with me).

SRQ/ACASI

```
Proportion(1) = 0.14                  n = 105
Proportion(2) = 0.13                  n = 105

   Difference between the two proportions = 0.01

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 0.212     p = 0.832 (two tail)

   95% CI on the difference is (-0.082, 0.102)
```

A p-value greater than 0.05 suggests no evidence that the proportions

are significantly different. (Do not reject the null hypothesis.)

SRQ/UCT

```
Proportion(1) = 0.14                  n = 105
Proportion(2) = 0.1                   n = 100

   Difference between the two proportions = 0.04

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 0.879     p = 0.379 (two tail)

   95% CI on the difference is (-0.049, 0.129)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

ACASI/UCT

```
Proportion(1) = 0.13                  n = 105
Proportion(2) = 0.1                   n = 100

   Difference between the two proportions = 0.03

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 0.672     p = 0.501 (two tail)

   95% CI on the difference is (-0.057, 0.117)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

Question 44 (I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection).

SRQ/ACASI

```
Proportion(1) = 0.05                  n = 105
Proportion(2) = 0.02                  n = 105

   Difference between the two proportions = 0.03

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 1.183     p = 0.237 (two tail)

   95% CI on the difference is (-0.02, 0.08)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

SRQ/UCT I

```
Proportion(1) = 0.05                  n = 105
Proportion(2) = 0.0                   n = 100

   Difference between the two proportions = 0.05

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal
```

```
   z = 2.265     p = 0.024 (two tail)

   95% CI on the difference is (0.007, 0.093)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

ACASI/UCT I

```
Proportion(1) = 0.02                  n = 105
Proportion(2) = 0.0                   n = 100

   Difference between the two proportions = 0.02

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 1.422     p = 0.155 (two tail)

   95% CI on the difference is (-0.008, 0.048)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

ACASI/UCT II

```
Proportion(1) = 0.02                  n = 105
Proportion(2) = 0.14                  n = 100

   Difference between the two proportions = 0.12

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -3.192     p = 0.001 (two tail)

   95% CI on the difference is (0.046, 0.194)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

SRO/UCT II

```
Proportion(1) = 0.05                  n = 105
Proportion(2) = 0.14                  n = 100

   Difference between the two proportions = 0.09

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -2.208     p = 0.027 (two tail)

   95% CI on the difference is (0.01, 0.17)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

UCT I/ UCT II

```
Proportion(1) = 0.0                   n = 100
Proportion(2) = 0.14                  n = 100
```

```
   Difference between the two proportions = 0.14

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -3.88     p = 0.0 (two tail)

   95% CI on the difference is (0.069, 0.211)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

Question 46 (I have raped someone).

SRQ/ACASI

```
Proportion(1) = 0.02                  n = 105
Proportion(2) = 0.02                  n = 105

   Difference between the two proportions = 0.0

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 0.0     p = 1.0 (two tail)

   95% CI on the difference is (-0.038, 0.038)
```

A p-value greater than 0.05 suggests no evidence that the proportions are significantly different. (Do not reject the null hypothesis.)

SRQ/UCT I

```
Proportion(1) = 0.02                  n = 105
Proportion(2) = 0.64                  n = 100

   Difference between the two proportions = 0.62

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -9.493     p = 0.0 (two tail)

   95% CI on the difference is (0.492, 0.748)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

ACASI/UCT I

```
Proportion(1) = 0.02                  n = 105
Proportion(2) = 0.64                  n = 100

   Difference between the two proportions = 0.62

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -9.493     p = 0.0 (two tail)

   95% CI on the difference is (0.492, 0.748)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

ACASI/UCT II

```
Proportion(1) = 0.02                  n = 105
Proportion(2) = 0.94                  n = 100

   Difference between the two proportions = 0.92

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -13.194     p = 0.0 (two tail)

   95% CI on the difference is (0.783, 1.057)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

SRQ/UCT II

```
Proportion(1) = 0.02                  n = 105
Proportion(2) = 0.94                  n = 100

   Difference between the two proportions = 0.92

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -13.194     p = 0.0 (two tail)

   95% CI on the difference is (0.783, 1.057)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

UCT I/UCT II

```
Proportion(1) = 0.64                  n = 100
Proportion(2) = 0.94                  n = 100

   Difference between the two proportions = 0.3

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -5.208     p = 0.0 (two tail)

   95% CI on the difference is (0.187, 0.413)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

Question 47 (I have raped someone together with one or more of my friends).

SRQ/ACASI

```
Proportion(1) = 0.02                  n = 105
Proportion(2) = 0.03                  n = 105

   Difference between the two proportions = 0.01

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal
```

```
   z = -0.464     p = 0.642 (two tail)

   95% CI on the difference is (-0.032, 0.052)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

ACASI/UCT II

```
Proportion(1) = 0.03                  n = 105
Proportion(2) = 0.22                  n = 100

   Difference between the two proportions = 0.19

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -4.145     p = 0.0 (two tail)

   95% CI on the difference is (0.1, 0.28)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

SRQ/UCT II

```
Proportion(1) = 0.02                  n = 105
Proportion(2) = 0.22                  n = 100

   Difference between the two proportions = 0.2

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -4.444     p = 0.0 (two tail)

   95% CI on the difference is (0.112, 0.288)

   A p-value less than 0.05 indicates that there is a significant difference in
proportions. (Evidence to reject the null hypothesis.)
```

Question 48 (I have refused to use a condom).

SRQ/ACASI

```
Proportion(1) = 0.12                  n = 105
Proportion(2) = 0.13                  n = 105

   Difference between the two proportions = 0.01

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -0.219     p = 0.826 (two tail)

   95% CI on the difference is (-0.079, 0.099)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

SRQ/UCT I

```
Proportion(1) = 0.12                    n = 105
Proportion(2) = 0.22                    n = 100

   Difference between the two proportions = 0.1

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -1.911     p = 0.056 (two tail)

   95% CI on the difference is (-0.003, 0.203)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

ACASI/UCT I

```
Proportion(1) = 0.13                    n = 105
Proportion(2) = 0.22                    n = 100

   Difference between the two proportions = 0.09

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -1.699     p = 0.089 (two tail)

   95% CI on the difference is (-0.014, 0.194)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

Question 52 (I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them)

SRQ/ACASI

```
Proportion(1) = 0.2                     n = 105
Proportion(2) = 0.17                    n = 105

   Difference between the two proportions = 0.03

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 0.56     p = 0.575 (two tail)

   95% CI on the difference is (-0.075, 0.135)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

SRQ/UCT I

```
Proportion(1) = 0.2                     n = 105
Proportion(2) = 0.8                     n = 100

   Difference between the two proportions = 0.6

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -8.589     p = 0.0 (two tail)

   95% CI on the difference is (0.463, 0.737)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

ACASI/UCT I

```
Proportion(1) = 0.17                  n = 105
Proportion(2) = 0.8                   n = 100

   Difference between the two proportions = 0.63

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = -9.027     p = 0.0 (two tail)

   95% CI on the difference is (0.493, 0.767)
```

A p-value less than 0.05 indicates that there is a significant difference in proportions. (Evidence to reject the null hypothesis.)

Question 65 (I regret having had sex).

SRO/ACASI

```
Proportion(1) = 0.34                  n = 105
Proportion(2) = 0.34                  n = 105

   Difference between the two proportions = 0.0

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 0.0     p = 1.0 (two tail)

   95% CI on the difference is (-0.128, 0.128)
```

A p-value greater than 0.05 suggests no evidence that the proportions are significantly different. (Do not reject the null hypothesis.)

ACASI/UCT II

```
Proportion(1) = 0.34                  n = 105
Proportion(2) = 0.34                  n = 100

   Difference between the two proportions = 0.0

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 0.0     p = 1.0 (two tail)

   95% CI on the difference is (-0.13, 0.13)
```

A p-value greater than 0.05 suggests no evidence that the proportions are significantly different. (Do not reject the null hypothesis.)

SRO/UCT II

```
Proportion(1) = 0.34                  n = 105
Proportion(2) = 0.34                  n = 100
```

```
   Difference between the two proportions = 0.0

   A test for Ho: The two proportion are equal
              Ha: The two proportion are not equal

   z = 0.0      p = 1.0 (two tail)

   95% CI on the difference is (-0.13, 0.13)

   A p-value greater than 0.05 suggests no evidence that the proportions
are significantly different. (Do not reject the null hypothesis.)
```

Appendix 8: Social Desirability Results

Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.223	3

Item Statistics			
	Mean	Std. Deviation	N
Method	2.8115	1.07465	610
SDR.Scale	1.3525	1.43337	610
Percent	.3275	.28225	610

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Method	1.6800	2.796	-.025	.473
SDR.Scale	3.1390	1.239	.178	.008
Percent	4.1639	3.116	.669	-.060[a]

a. The value is negative due to a negative average covariance among items. This violates reliability model assumptions. You may want to check item codings.

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
4.4915	3.862	1.96530	3

Scale: Social Desirability

Anova Results

Descriptives

Percentages

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
ACASI	105	.3257	.27211	.02656	.2731	.3784	.00	1.00
SRQ	105	.3352	.30696	.02996	.2758	.3946	.00	1.00
UCT1	200	.3150	.27742	.01962	.2763	.3537	.00	1.00
UCT2	200	.3370	.28040	.01983	.2979	.3761	.00	1.00
Total	610	.3275	.28225	.01143	.3051	.3500	.00	1.00

Test of Homogeneity of Variances

Percentages

Levene Statistic	df1	df2	Sig.
.892	3	606	.445

ANOVA

Percentages

			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		.056	3	.019	.233	.873
	Linear Term	Unweighted	.001	1	.001	.016	.899
		Weighted	.003	1	.003	.038	.845
		Deviation	.053	2	.026	.331	.719
Within Groups			48.461	606	.080		
Total			48.517	609			

Appendix 9: Experience of Participation Results

Reliability Statistics

Case Processing Summary

		N	%
Cases	Valid	610	100.0
	Excluded[a]	0	.0

Total	610	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.195	.539	3

Item Statistics

	Mean	Std. Deviation	N
Method	2.8115	1.07465	610
EPScale	3.9738	3.46211	610
Percent	.5705	.33837	610

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Method	4.5443	13.903	.022	.004	.259
EPScale	3.3820	1.308	.245	.592	.059
Percent	6.7852	13.282	.746	.593	.021

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
7.3557	15.238	3.90353	3

ANOVA

Descriptives

Percent	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	Between-Component Variance
					Lower	Upper			

						Bound	Bound			
ACASI		105	.5457	.37237	.03634	.4737	.6178	.00	1.00	
SRQ		105	.5371	.35606	.03475	.4682	.6060	.00	1.00	
UCT1		200	.5855	.32522	.02300	.5402	.6308	.00	1.00	
UCT2		200	.5860	.32331	.02286	.5409	.6311	.00	1.00	
Total		610	.5705	.33837	.01370	.5436	.5974	.00	1.00	
Model	Fixed Effects			.33854	.01371	.5436	.5974			
	Random Effects				.01371[a]	.5269[a]	.6141[a]			-.00016

a. Warning: Between-component variance is negative. It was replaced by 0.0 in computing this random effects measure.

Test of Homogeneity of Variances

Percent

Levene Statistic	df1	df2	Sig.
3.613	3	606	.013

ANOVA

Percent

			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		.274	3	.091	.798	.495
	Linear Term	Unweighted	.197	1	.197	1.720	.190
		Weighted	.198	1	.198	1.729	.189
		Deviation	.076	2	.038	.332	.717
Within Groups			69.454	606	.115		
Total			69.729	609			