



The reliability and validity of questionnaire delivery mode in social science research: A comparative study investigating disclosure rates of sensitive behaviours amongst university students, comparing three different questionnaire methods.

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DECLARATION

Submitted in partial fulfilment of the requirements for the degree of
Social Sciences Masters, in the Graduate Programme in Applied Human Sciences,
University of KwaZulu-Natal, Pietermaritzburg, South Africa.

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ABSTRACT

Social Science research often investigates sensitive behaviours and the potential impact they may have on broader societal functioning. Sensitive behaviours are those that are concerned with private, stressful or sacred issues, and which may elicit emotional responses. Valid and reliable methods for obtaining accurate sensitive information are essential in order to generate accurate prevalence rates of risky behaviours.

This research was concerned with using an experimental cross-sectional between subjects research design in order to compare three Questionnaire Delivery Modes (QDMs) in obtaining sensitive information from a University student population. The specific sensitive behaviours of concern were those linked to risky sexual practices and alcohol consumption. Disclosure rates of sensitive behaviours were used to compare the QDMs. A further subsidiary aim of this research was to explore the difference in social desirability bias and experience of participation across the three different Questionnaire Delivery Modes.

Results of this research indicate that the Unmatched Count Technique (UCT) resulted in higher disclosure rates for some of the sensitive behaviour items. The Audio Computer-Assisted Self Interviewing (ACASI) and the Self Report Questionnaire (SRQ) revealed similar disclosure rates amongst most items. Results reveal no significant difference in social desirability bias amongst all three modes. The experience of participation indicated a mild preference for the Unmatched Count Technique. Results also reveal high prevalence rates of risky sexual behaviour linked to alcohol use, amongst a student population. These results have major implications for health care providers and intervention strategies. This research reveals that the Unmatched Count Technique may be a preferential method for obtaining sensitive information, in a reliable and valid manner. These findings have important implications for future research in the area of sensitive behaviours.

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LIST OF ABBREVIATIONS USED

ACASI – Audio Computer-Assisted Self-Interview

EP – Experience of Participation

FTFI – Face to Face Interview

HEAIDS – The Higher Education HIV/AIDS Programme

ICVI – Informal Confidential Voting Interview

PMB - Pietermaritzburg

QDM – Questionnaire Delivery Mode

RRT – Randomized Response Technique

SD – Social Desirability

SRQ – Self-Report Questionnaire

STI – Sexually Transmitted Infection

UCT – Unmatched Count Technique

UKZN – University of Kwa-Zulu Natal

CHAPTER 1 - INTRODUCTION

Social science research often involves investigation into sensitive topics such as sexual behaviour, substance abuse, violent behaviour and criminal behaviour. Researching sensitive topics such as these involves many challenges. One major challenge is that researchers rely primarily on self-reported truthful disclosure of information by research participants. However, in many instances high rates of truthful disclosure of information are not achieved (Ahart & Sackett, 2004; Armacost, Hosseini, Morris, & Rehbein, 1991; Catania et al., 1990; Dalton, Wimbush, & Daily, 1994; Estes et al., 2010;). It is essential to discover research methods that maximise truthful disclosure of information from research participants. If one is able to find reliable and valid methods of gaining accurate information from research participants, then those methods may be applied to other research scenarios, thereby increasing the accuracy of future research. Such research is invaluable for a wide range of research fields including medical, social and public health research. In addition, such research is important for gaining a greater understanding of human behaviour, as well as for designing and evaluating intervention strategies.

The issue of truthful disclosure is of particular concern when the subject matter is of a sensitive nature. Research participants are less likely to respond accurately to questions of a sensitive nature due to concerns of confidentiality, anonymity, the fear of stigmatization and embarrassment, as well as potential legal ramifications (Chaudhuri & Christofides, 2007; Dalton, Wimbush, & Daily, 1994; Hays, Hayashi, & Stewart, 1989; Kays, Gathercoal, & Buhrow 2011; McCosker, Barnard, & Gerber, 2001). Sensitive questions are those that are concerned with private, stressful or sacred issues, and which may elicit emotional responses (Lensvelt-Mulders, 2008; McCosker et al., 2001). Social science research often involves asking sensitive questions in order to understand the complexities of many social issues. It is imperative that social science research is able to ask sensitive questions in a manner that is minimally invasive or stressful to research participants, and in a way that maximises truthful disclosure of information. If such research methods are developed, then it may enable more accurate depictions of social issues, and therefore enable more effective intervention strategies as well as the evaluation of such.

Research that investigates the reliability and validity of Questionnaire Delivery Modes (QDMs) in extracting sensitive information is therefore vitally important for social science

research as a whole. This research aims to compare the disclosure rates of sensitive behaviours as an analogue of reliability and validity of three QDMs in investigating sensitive behaviours amongst a university student population. A second aim of this research is to obtain an estimate of the prevalence rates of sensitive behaviours, namely: risky sexual behaviours, among a university student population. A further subsidiary aim is to gain an understanding of the influence of social desirability on truthful disclosure of sensitive information, as well as to gain an understanding from participants about the experience of responding to different QDMs. The results from this research may contribute meaningfully to further research in the social science arena.

CHAPTER 2 – LITERATURE REVIEW

Valid and reliable social science research

Social science research often involves the use of self-report methods for gaining information from research participants. The social science researcher relies heavily upon the research participant's truthful disclosure of information in the form of self-reports. Hays, Hayashi and Stewart (1989) maintain that a self-report is the combination of self-disclosure (revealing truthful information about oneself) and self-presentation (the desire to be viewed in a positive manner). They argue that the validity of self-reports may be compromised when self-presentation increases in relation to self-disclosure. Self-report methods have been used extensively in social science research; however, they do not always reveal accurate accounts of reality, especially when the subject matter is of a sensitive nature (Armacost, Hosseini, Morris & Rehbein, 1991; Dalton & Metzger, 1992; Dalton, Wimbush & Daly, 1994; Langhaug, Sherr & Cowan, 2010; Langhaug et al., 2012, Mensch, Hewett & Erulkar, 2003; Weinhardt et al., 1998). It is crucial to ensure that research is done in a manner that is valid and reliable for gaining accurate information on specific topics. The issue of generating valid and reliable research outcomes is exacerbated when the research topic is of a sensitive nature.

Using a Questionnaire Delivery Mode (QDM) that provides accurate, valid and reliable information on sensitive topics is of vital importance. Validity is the degree to which the research findings apply to the broader population and reliability is when an instrument consistently proves to measure a particular variable (Van der Riet & Durrheim, 2006). Assessing the validity and reliability of different QDMs is essential for understanding which methods are optimal for different research aims. Firstly: if researchers are able to generate an accurate depiction of the prevalence rates of sensitive behaviours, such as risky sexual practices, then research can be used to inform intervention strategies. Secondly: if research reveals valid and reliable methods for gaining sensitive information from participants, then these methods may be used more frequently in research regarding sensitive topics, as well as monitoring and evaluating intervention strategies..

Many studies have been conducted on the prevalence rates of different sensitive behaviours, whilst comparing two or more QDMs. However, research has revealed that there is still little consensus amongst researchers as to which methods are best for obtaining sensitive information (Weinhardt et al., 1998). Further research is needed in order to provide

additional insight into this issue. There is also little insight into the use of these methods within the diverse South African context; indicating a need for further investigation. Many studies reveal that the Unmatched Count Technique (UCT) is a useful method for revealing higher estimates of sensitive behaviours (Chaudhuri & Christofides, 2006; Dalton et al., 1994; Dalton et al., 1997; LaBrie & Earleywine, 2000). There are various other methods of improving the estimates of sensitive behaviours, such as: the Audio Computer-Assisted Self Interview (ACASI), Informal Confidential Voting Interview (ICVI), Face To Face Interview (FTFI), and the Randomized Response Technique (RRT). These methods shall be explained further, later on in this section.

Little research has focussed on the reliability and validity of different QDMs in assessing sensitive behaviours within South Africa. This study aims to use disclosure rates of sensitive behaviours as an analogue of reliability and validity of two such methods, namely: the UCT and ACASI in comparison with the SRQ. These QDMs will be used to determine the rates of disclosure of sensitive information. The rates of disclosure will serve to provide a measure of the reliability and validity of the QDMs.

Determining the reliability of self-report measures of sensitive behaviours is highly problematic in the absence of a biological or observable end result, such as Sexually Transmitted Infections (STI's), pregnancy or a criminal conviction. Most often there is no objective truth with which to compare, and therefore one needs to consider alternative methods for determining reliability and validity. This research compares disclosure rates as an analogue of reliability, which certainly poses risks in terms of the potential for artificially inflated or deflated disclosure rates. However, it is considered an appropriate method of determining a resemblance of reliability in the absence of objective measures of truth (LaBrie & Earleywine, 2000).

Background

Self-Report Questionnaires (SRQs) are most often relied upon by social science researchers in order to gain an efficient and rapid understanding of certain social science research topics. These methods may be appropriate in many instances; however, the application of these methods with regard to sensitive topics specifically, may reveal less accurate information. SRQ's are notoriously problematic with regard to the validity and reliability of reporting accurate measures of sensitive behaviours (Brener, Billy & Grady, 2003; Coutts & Jann, 2011; Langhaug et al., 2010; Näher & Krumpal, 2012; Weinhardt et al.,

1998). The problem lies with the fact that SRQ's tend to result in an increase in reporting errors, such as: under-reporting; distortions in reporting, and misreporting (Langhaug et al., 2010). The accuracy of information generated from SRQ's, in certain circumstances, is therefore questionable. It is essential then, to consider more appropriate methods for generating more accurate conclusions in these circumstances.

Weinhardt et al. (1998) maintain that SRQs are still widely used by researchers, due to ethical and practical concerns. However, they insist that these methods are worthless in generating reliable and valid information regarding sensitive behaviours. They argue that SRQ's often result in research participants intentionally misrepresenting information in order to reduce the potential negative effects of truthful disclosure. Negative effects range from fear of embarrassment or stigmatization to fear of potential legal repercussions of admitting to certain behaviours (Brenner, Billy & Grady, 2003; Coutts & Jann, 2011; Langhaug et al., 2010; Näher & Krumpal, 2012; Weinhardt et al., 1998). It is important to conduct research on sensitive topics in a way that ensures research participants' privacy; in order to encourage truthful disclosure that will not result in negative consequences. This highlights the need for researchers to identify better methods for gaining accurate information whilst reducing the potential negative effects that research participants may experience.

Participation bias and response bias are further issues that social science researchers face. This involves the tendency for research participants to intentionally misrepresent or inaccurately recall information (Catania et al., 1990). These errors may be due to cognitive issues, such as comprehension, or due to situational issues, such as social desirability (Brenner et al., 2003). A participant may not fully comprehend the meaning of a statement, and thereby respond inaccurately. Alternatively, a participant may respond in a manner that enhances the social desirability of the response, and thereby report inaccurate information. This is referred to as social desirability bias, which is the tendency for research participants to respond in a manner that represents them in a favourable light (Johnson & Fendrich, 2002).

Both scenarios ultimately result in compromised research data. It is essential to establish methods that will enable research participants to feel comfortable in reporting accurate information, and therefore reduce the intentional misrepresentation of information. It is also important to establish methods that will encourage accurate recall of information, and limit poor comprehension of research questions. These issues further emphasize the

importance of establishing effective research methods that will increase the reliability and validity of social science research.

Problems specific to asking sensitive questions

A large portion of social science research concerns investigation into social behaviour involving personal information that is important for understanding social issues, but which is also considered very sensitive for the research participants taking part in the research. Questions are considered to be sensitive when they concern private, stressful or sacred issues, and which may elicit emotional responses (Lensvelt-Mulders, 2008; McCosker et al., 2001). Sensitive questions tend to be intrusive in nature, and may be regarded as an invasion of one's privacy (Näher & Krumpal, 2012; Tourangeau & Yan, 2007). Research in the area of sensitive behaviours is incredibly important because it allows researchers and interested parties to gain a better understanding of sensitive behaviours that may lead to negative social consequences such as: the spread of sexually transmitted infections, road accidents due to drinking and driving, or social and personal harms due to drug abuse. However, numerous challenges are faced when asking sensitive questions. Challenges such as: research participants being concerned about the anonymity and confidentiality of their sensitive responses, responding in a socially desirable manner, and response bias. These issues are discussed further below.

It is imperative to determine ways in which researchers can ask sensitive questions, using a method that increases, amongst other factors, the anonymity and confidentiality of participants. This will ensure that research participants are protected, and will likely reduce the distress experienced by research participants. Therefore, research participants may be inclined to answer more truthfully because they are aware that their identity will remain unknown, and as a result, they will not suffer potential negative consequences of disclosing sensitive information. It is also imperative to ensure that measures are taken to consider all ethical aspects of research involving sensitive behaviours, so as to ensure that all research participants are protected optimally.

Much research has highlighted the fact that asking sensitive questions increases the likelihood of compromised results due to participant apprehension regarding social desirability (Hosseini & Armacost, 1990; Hosseini & Armacost, 1993; Näher & Krumpal, 2012; Tourangeau & Yan, 2007). Social desirability involves the tendency for research participants to answer questions less truthfully due to the repercussions of answering such

questions truthfully (Tourangeau & Yan, 2007). This is especially important when one considers research that focuses on illegal behaviours such as abusing illegal narcotics or engaging in under-aged sexual practices. The likelihood of research participants answering truthfully to questions such as these is highly diminished. This is due to potential legal repercussions or the perceived stigma that may be attached to admitting certain types of behaviours (Hosseini & Armacost, 1993). It is important then, to determine which research methods enhance the truthful disclosure of information by reducing the negative effects of social desirability.

Linked to social desirability bias, is the issue of response bias. This is the tendency for research participants to either over-report socially desirable behaviours, or to under-report socially undesirable behaviours (Armacost et al., 1991). The extent of the under-reporting is likely to increase in relation to the sensitivity of the questions being asked; or in relation to the potential for experiencing negative consequences as a result of admitting certain undesirable behaviours. It is therefore important to generate research methods that reduce reporting errors by addressing the issue of response bias. If research participants are ensured anonymity and confidentiality then it is likely that they will feel more comfortable about disclosing sensitive information, and they may be less likely to succumb to response bias.

Furthermore, if research participants are made fully aware that the focus of the research is entirely on gaining a better understanding of prevalence rates of sensitive behaviours, rather than on gaining access to incriminating information, then it may serve to provide additional encouragement for participants to feel more comfortable to disclose sensitive information.

How research has responded to addressing the problem

Much research has been conducted in the arena of sensitive behaviours. Studies have focussed on a wide assortment of topics ranging from comparing different QDMs for asking sensitive questions, to comparing different ways of phrasing sensitive questions. Little consensus has been reached regarding a single, best possible method for obtaining sensitive information; several different methods have been identified as appropriate for different contexts. It is important to consider the applicability of different methods across a wide range of research topics in order to gain a better understanding of the suitability of different methods.

Tourangeau and Yan (2007) reviewed several studies that focussed on assessing different ways of approaching sensitive questions in research. They considered three areas of interest, firstly: the mode of administration; secondly: the setting in which data is collected, and finally: the phrasing of the questions being asked. Results revealed that misreporting was largely influenced by situational factors, such as whether or not an individual had anything embarrassing to disclose. Design features of the studies were also considered important in influencing the amount of reporting errors. Research participants were found to respond more truthfully if questions were self-administered in private settings where anonymity and confidentiality were maximised (Tourangeau & Yan, 2007). This research illustrates the importance of taking many different factors into consideration when designing research that is concerned with asking sensitive questions.

Catania et al. (1990) conducted a review of literature of methodological issues in behavioural research. Amongst the issues discussed in this review were the barriers to gaining accurate information from research participants. Issues included the research participant's comprehension of various sensitive questions, in particular: terminology for sexual behaviours, as well as the way in which research was presented to potential participants. This further emphasizes the importance of considering a range of issues when designing research that involves asking sensitive questions. It is important to establish research methods that enhance participant privacy in order to minimise the likelihood that participants will feel the need to respond to sensitive questions in a socially acceptable manner. It is also important to ensure that the terminology used in questionnaires is appropriate for the context within which the research is being conducted. If research participants do not understand the questions being asked, then it is likely that they will be unable to answer questions correctly. This would ultimately increase non-response rates and decrease the reliability and validity of the research being conducted.

In a study comparing response rates of sensitive behaviours in adolescents, Brener et al. (2003) concluded that the greater the amount of privacy offered to participants, the higher the response rates were. This has important implications for designing research conditions that ensure a comfortable environment and conditions that maximise privacy for research participants.

There are a vast number of different QDMs that researchers may use when investigating sensitive behaviours. Numerous other studies have been conducted that

compare different QDMs in order to determine which methods prove most valid and reliable in obtaining sensitive information. These shall be discussed in greater detail in the following section.

Question Delivery Modes (QDMs)

A brief overview is provided below of the following six QDMs: the Self-Report Questionnaire (SRQ), the Unmatched Count Technique (UCT), the Audio Computer-Assisted Self Interview (ACASI), the Informal Confidential Voting Inventory (ICVI), the Face-To-Face Interview (FTFI), and the Randomised Response Technique (RRT). The focus of this research, however, is on three methods, namely: the SRQ, UCT and ACASI. Following the overview is an outline of previous research comparing different QDMs.

Self-Report Questionnaire (SRQ)

The Self-Report Questionnaire (SRQ) is generally a paper-based questionnaire whereby research participants are required to complete questions on the paper provided. This method is widely used for assessing sexual behaviour, despite the fact that these methods have been proven to have questionable reliability (Brener, Billy & Grady, 2003; LaBrie & Earleywine, 2000; Tourangeau & Yan, 2007; Walsh & Braithwaite, 2008; Weinhardt et al., 1998).

In order to comply with ethical policies relating to the protection of research participants, no identifiable information should be taken when using SRQs, thereby increasing anonymity and confidentiality, and enhancing truthful responding from research participants. However, the actual process of dealing with the researcher directly is likely to increase the research participant's anxieties concerning their responses. Anxiety may be related to fear of stigmatization; the potential repercussions of admitting certain behaviours, as well as potential embarrassment. Other issues include: social desirability bias; underreports of stigmatized behaviour, and over reports of socially acceptable behaviours (Lewontin, 1995, as cited in Weinhardt et al., 1998).

SRQs are still widely used in research that investigates sensitive behaviour because of the ethical and practical limitations of using more direct QDMs (Weinhardt et al., 1998). It is essential then, to devise QDMs that can be used ethically and practically, whilst ensuring high rates of truthful disclosure of sensitive information. In this research, the SRQ will be used as a comparative tool. The rates of disclosure from all three QDMs will be used as an

analogue of validity and reliability of the different methods. QDMs with the highest disclosure of sensitive information will be considered to be more valid and reliable in obtaining sensitive information.

Unmatched Count Technique (UCT)

The Unmatched Count Technique was developed as an alternative to the original method called the Item Count Technique that was developed by Miller (1984) (Chaudhuri & Christofides, 2006). The UCT method involves a procedure whereby participants are randomly assigned to one of two groups. Each group receives a set of statements. One group will receive a set of statements that contain non-sensitive items, whilst the other group will receive the exact same non-sensitive statements, but a sensitive statement is included. Participants are asked to indicate how many of the statements apply to them. The participant does not indicate the specific statements that apply to them, simply the total number of statements (Coutts & Jann, 2011; Dalton et al., 1994; LaBrie & Earleywine, 2000; Tsuchiya, 2005; Tsuchiya, Hirai & Ono, 2007). The UCT method provides base rate estimates of prevalence rates by comparing the two group means. Dalton et al. (1994) argue that the mean of the group with the additional sensitive item will be greater than the mean of the group without the sensitive item.

This method is successful in gaining higher base rate estimates of sensitive behaviours because participants are ensured anonymity (Chaudhuri & Christofides, 2006; Dalton et al., 1994; Dalton et al., 1997; LaBrie & Earleywine, 2000). It is impossible for the researcher to know exactly which statements apply to each participant; they can merely know the number of statements that are true for each participant. In this way, it enables the participant to disclose potentially sensitive, stigmatizing, embarrassing or legally incriminating information without concern or fear of negative consequences. Another benefit to using this method is the fact that it does not require the use of a randomisation process, unlike other methods such as the RRT (Tsuchiya, 2005). In this way, the UCT is fairly easily administered. However, the UCT is a complex method in other areas.

It is important to note that the UCT provides an indirect estimation of behaviour. It does not allow for conclusions to be made about specific behaviours based on responses (Coutts & Jann, 2008). The UCT is therefore a useful tool for gaining an understanding of broad behavioural patterns, and not specific rates of behaviour. The UCT has been proven to be effective for gaining higher estimates of sensitive behaviours such as employee

misconduct, shoplifting, hate crimes as well as risky sexual practices (Coutts & Jann, 2008). Therefore the UCT may be most useful for estimating criminal behaviour as well as risky sexual practices.

Many studies have revealed that when using the UCT method, higher response rates of socially undesirable, stigmatizing or embarrassing behaviours were achieved (Dalton et al., 1994; LaBrie & Earleywine, 2000; Tsuchiya, Hirai & Ono, 2007). Some research that focussed on using the UCT to ask less sensitive questions, found that there were no significant differences in response rates between the UCT and SRQ methods (Droitcour et al., 1991; Ahart & Sackett, 2004). These findings further emphasise the importance of using appropriate QDMs for different research topics. When the topic is of a sensitive nature, it is imperative to use methods that will reduce the subjective distress experienced by research participants. When the topic is of a less sensitive nature, then it is not necessarily important to use indirect QDMs, and more direct SRQ methods may be more appropriate.

It is also important to note that the UCT is only useful for providing group estimates and cannot be linked to individuals (Coutts & Jann, 2008). Whilst this may be beneficial for protecting research participant's identities and ensuring anonymity, it does limit the type of data that is obtained from this method, and therefore the analysis of such data. It is essential to consider the type of research question being asked and then determine the appropriateness of this method.

A limitation of the UCT is that negative base rates, and base rates over the value of 1.0, can occur during analysis. Negative base rates are not suitable for further analysis as it is not possible to compare negative values with positive values. There are numerous possible causes of negative base rates. Some research suggests that negative base rates may occur due to the following reasons: participants may be wary of non-sensitive items within the forms; participants may count the total number of favourable responses incorrectly or carelessly, or due to other participant errors such as purposeful misreporting (Alledahn, 2011; Chaudhuri & Christofides, 2007). Base rates over the value of 1.0 are also not suitable for further analysis. These values can occur due to a number of possible reasons including over reporting or misinterpretation of instructions. In the case of over reporting, this can be associated with bragging, as has been reported in previous research (Langhaug et al., 2010;). These are important factors to consider when conducting the data analyses.

Audio Computer-Assisted Self-Interviewing (ACASI)

This QDM incorporates the use of a standard SRQ, on a computer, in combination with an audio soundtrack. The procedure for ACASI is for the questions to be delivered to the research participant via a computer screen and audio soundtrack that narrates the questionnaire via headphones. Each participant is instructed to indicate his or her answers to the questions by selecting the correct letter on the computer keyboard (Potdar & Koenig, 2005). Research has shown that ACASI improves the quality of data, decreases non-response rates and increases the rates of disclosure regarding sensitive behaviours (Langhaug, Sherr & Cowan, 2010). The fact that research participants provide their responses directly onto the computer ensures that the data is captured more accurately and efficiently. This reduces the likelihood of capturing results incorrectly.

When using ACASI, participants are ensured higher rates of privacy and therefore are more likely to answer truthfully to sensitive questions (Des Jarlais et al., 1999; Estes et al., 2010). This method is successful in gaining sensitive information from participants because the participant is the only one who sees the responses to each question. This privacy provides the participant with more freedom to answer potentially sensitive, stigmatizing or embarrassing questions. This method certainly would involve certain limitations such as participant levels of computer literacy; access to equipment, and a suitable venue or computer lab within which to conduct the research.

Informal Confidential Voting Inventory (ICVI)

This QDM involves an indirect questioning technique, whereby interviewers verbally ask questions and research participants privately indicate their response on a ballot, which is then inserted into a voting box (Gregson et al., 2004). This method has shown to enhance self-disclosure, thereby increasing the accuracy of information generated. Research also indicates that this method enables interviewers to establish rapport with the research participants, which may serve to enhance their experience of participation (Gregson et al., 2004).

Face-To-Face Interview (FTFI)

This QDM is an interactive mode whereby a more personal approach is involved. This method involves verbal questioning and verbal responding. Rapport may be established

between interviewer and participant, and clarification of any misinterpretations or misunderstandings may be clarified instantly. This method allows for open-ended, forced choice or multiple choice type questioning (Mandal, Eaden, Mayberry, & Mayberry, 2000). Whilst this method has many advantages, there are drawbacks to using this method, especially when it comes to asking sensitive questions. The drawbacks have been discussed in greater detail in earlier sections. They include social desirability bias, and misreporting due to fear of embarrassment, stigmatisation or fear or persecution.

Randomised Response Technique (RRT)

This QDM involves a process whereby questions are paired according to levels of sensitivity. For instance: a sensitive item is paired with a non-sensitive, unrelated item. This method involves the use of a randomising method which indicates which of the two paired items is answered. This method has shown to increase disclosure rates. However, it proves to be time-consuming and complex (Coutts & Jann, 2011). This method is considered to be highly popular, and useful for obtaining sensitive information due to the fact that researchers are unable to link questions directly to participants. Therefore, participants feel more comfortable to respond truthfully (Tsuchiya, 2005).

Previous Research Comparing QDMs

In a study that focussed on risky sexual practices and alcohol consumption, LaBrie and Earleywine (2000) revealed that the UCT method resulted in higher response rates than the SRQ method. These results have important implications for future research related to sensitive topics. However, not all research has revealed the same findings as LaBrie and Earleywine (2000). Research conducted by Ahart and Sackett (2004) revealed that when UCT and SRQ methods were used to extract information regarding counterproductive behaviour in undergraduate students; there was no significant difference in the resultant base rates. These results indicate that certain research topics may not require the use of methods that increase the privacy of research participants. It is possible that the topic of counterproductive behaviours may be considered by undergraduate students to be less sensitive than risky sexual behaviours. It is important to conduct more research that focuses on the use of different QDMs across a wide range of topics, ranging in sensitivity, in order to gain a better understanding of the applicability of different methods.

Gregson, et al. (2004) conducted a study comparing the ICVI and the FTFI methods for gathering information on risky sexual behaviour. The results of this study revealed that ICVI was an effective method for reducing social desirability bias, and therefore increasing response rates of sensitive behaviours.

Estes et al. (2010) conducted a study that focussed on the use of ACASI with HIV positive women. They concluded that ACASI is an effective method for gaining sensitive information from individuals because it increases the participant's privacy, ensures anonymity, and results in more honest responses from participants. These findings have important implications for questionnaire design, but it is also important to note that research participants reported appreciating the personal interaction and the ability to explain responses that FTFI afforded (Estes et al., 2010). This method may, however, be more useful in qualitative research, whereby the researcher would have a better opportunity of establishing rapport with a smaller sample of research participants. With a smaller sample of participants, researchers may be afforded with the opportunity to engage with participants in a more personal manner. However, it would be important to ensure that interviewers were well-trained and prepared for conducting interviews of a sensitive nature.

Social Desirability

Social desirability bias is when research participants avoid disclosing the truth due to the potentially negative perceptions that may be associated with the truth. Research participants often answer questions untruthfully due to social desirability bias and the fear of stigmatization (Chaudhuri & Christofides, 2007; Dalton, et al., 1994; Estes et al., 2010; Johnson & Fendrich, 2002; LaBrie & Earleywine, 2000; Langhaug, et al., 2011; Hays, et al., 1989; Kays, et al., 2011). According to Hays et al. (1989) social desirability bias is the tendency for participants to present themselves in a way that is considered socially acceptable. In the light of sensitive questions then, social desirability bias is considered even more prevalent. It is essential to determine which QDMs minimise social desirability bias, in order to provide accurate representations of sensitive behaviours.

When research focuses on sensitive behaviours it increases the chances that research participants will want to present themselves in a positive manner, and may avoid answering sensitive questions truthfully (Holbrook & Krosnick, 2010). When research participants intentionally present themselves in an inaccurate manner in order to create a socially admirable facade, it compromises the research findings. Therefore, it is imperative to

establish research methods that minimise the fear of judgement that research participants may feel, and in doing so, maximise the truthful disclosure of sensitive information. If research participants can disclose sensitive information anonymously, then it should reduce the likelihood of social desirability bias occurring.

The importance of this research

This research is focussed on two main areas. Firstly: this research aims to compare the disclosure rates of sensitive behaviours as an analogue of reliability and validity of three QDMs in investigating sensitive behaviours amongst a university student population. Secondly: this research aims to obtain an estimate of the prevalence rates of sensitive behaviours, namely: risky sexual behaviours, among a university student population. As has been mentioned previously, a further subsidiary aim of this research is to gain an understanding of the influence of social desirability on truthful disclosure of sensitive information, as well as to gain an understanding from participants about the experience of responding to different QDMs. It is imperative that researchers determine which methods are most reliable in generating an accurate picture of certain social issues, especially those that are considered to be private, sacred or sensitive. When the research topic is of a sensitive nature, then it is even more important to establish which questionnaire methods minimise the potentially harmful experience of research participation, as well as increase the truthful disclosure of sensitive information.

This research may serve to inform future research that focuses on investigating sensitive questions by determining which of the three QDMs results in highest disclosure rates of risky sexual behaviour. If the findings from this research reveal significant results regarding the disclosure rates of sensitive behaviours, which may be considered an analogue of reliability and validity of different QDMs, then it will have vital implications for future research. Social science researchers may access the information generated from this study in order to inform future research. If a single QDM is revealed to be preferable, in terms of higher disclosure rates, then this may provide a level of confidence in using the QDM for future research that is concerned with investigating private or sensitive behaviours.

This research also aims to generate an estimated indication of the prevalence rates of risky sexual behaviour amongst a university student population. It is important to investigate sexual behaviour of young adults, in particular risky sexual behaviour, because this behaviour is a major contributor to reproductive and sexual health (Johnson et al., 2001). If one is able

to understand the patterns of transmission of Sexually Transmitted Infections (STIs), it may provide valuable information for the development of effective intervention plans (Fenton, Johnson, McManus, & Erens, 2001). The information gained from this research has the potential to inform health care providers for future health-promotion campaigns. Additionally, this research may serve to gain valuable insight into the level of risk that the student population of interest is at. Furthermore, the University may access this information and implement specific strategies targeting the precise areas of concern that may be revealed from this research.

Research shows that risky sexual practices and alcohol consumption are correlated; alcohol consumption has been linked with decreased use of condoms in males, especially with casual partners (Gordon, Carey, & Carey, 1997; LaBrie et al., 2005; McEwan, McCallum, Bhopal, & Madhok, 1992; Seidman & Reider, 1994). Some research has been conducted in the South African context in the area of risky sexual practices, with a particular focus on the risks associated with contracting HIV. The research also considered the impact that alcohol consumption has on risky sexual practices. It revealed a strong link between alcohol consumption and higher prevalence rates of risky sexual practices, such as: multiple and/or concurrent sexual partners, and decreased condom use (Hendriksen, Pettifor, Coates & Rees, 2007; Kalichman et al. 2008; Morojele, Brook & Kachienga, 2006).

There are numerous negative consequences associated with risky sexual practices and decreased condom use, such as unwanted pregnancies and increased risk of contracting HIV and other STIs (Simbayi, Chauveau, & Shisana, 2004; Simons et al., 2010). These consequences have major implications for health care providers, government spending, policy makers and medical aid companies. This further emphasizes the importance of understanding risky sexual practices in order to develop effective intervention or educational strategies aimed at reducing the risks and related health issues.

If the findings of this research reveal important information related to the prevalence rates of risky sexual behaviour, then this information may be used to provide motivation for behaviour change in at-risk individuals. The importance of creating educational awareness, and the resultant effect that it can have on behaviour modification, is a crucial element for effective intervention strategies.

It is crucial to improve research methods in order to gain a more accurate understanding of sensitive behaviours (Potdar & Koenig, 2005; Couper, Singer, &

Tourangeau, 2003). On going research in the field of sensitive behaviours is essential for understanding behavioural trends within different societies. With greater understanding comes greater opportunity to provide effective intervention strategies aimed at minimising the potentially negative consequences of sensitive behaviours.

CHAPTER 3 – AIMS AND RATIONALE

This research was concerned with generating and comparing disclosure rates of sensitive behaviours using three QDMs: the SRQ, UCT and ACASI. The disclosure rates of sensitive behaviours were considered to be an analogue of reliability and validity. This study aimed to:

1. Investigate which QDMs (SRQ, UCT and ACASI) provide the highest disclosure rates of sensitive behaviours (such as risky sexual practices and alcohol use) as an analogue of validity.
2. Understand the experience of participation across the different QDMs.
3. Understand group estimates of social desirability pertaining to the different QDMs.
4. Generate an estimation of prevalence rates for risky sexual practices, particularly those linked to alcohol use, within a student population.

This research is important for gaining estimates of risky sexual behaviours and alcohol use. The results from this study may be useful for informing intervention strategies aimed at the student population. The results of this study may also be useful for informing future research that investigates sensitive behaviours, by revealing which QDM/s provide highest disclosure rates. Additionally, by investigating disclosure rates of sensitive behaviours in a student population, it may serve to inform numerous tertiary institutions of behavioural trends and potential areas of concern that may need to be addressed.

Research Questions

1. Which method/s (SRQ, UCT or ACASI) provide greater disclosure rates of sensitive behaviours?
2. Which method/s provide a comfortable experience of participation for university students?
3. Which method/s minimises social desirability bias?
4. What are the estimated prevalence rates of risky sexual practices, particularly those linked to alcohol use, within a student population?

Hypotheses

The following hypotheses have been set with regard to the first three main research questions. The fourth research question is not concerned with proving or disproving hypotheses; it is merely concerned with generating prevalence rates of specific behaviours.

Base Rate Estimates

H₀: There is no significant difference in the base rate estimates of the SRQ and the ACASI on the selected sensitive items.

H₁: There is a significant difference in the base rate estimates of the SRQ and the ACASI on the selected sensitive items.

H₀: There is no significant difference in the base rate estimates of the SRQ and the UCT on the selected sensitive items.

H₁: There is a significant difference in the base rate estimates of the SRQ and the UCT on the selected sensitive items.

H₀: There is no significant difference in the base rate estimates of the ACASI and the UCT on the selected sensitive items.

H₁: There is a significant difference in the base rate estimates of the ACASI and the UCT on the selected sensitive items.

Social Desirability

H₀: There is no significant difference in the social desirability response rate of the three QDMs (SRQ, ACASI, UCT).

H₁: There is a significant difference in the social desirability response rate of the three QDMs (SRQ, ACASI, UCT).

Experience of Participation

H₀: There is no significant difference in the experience of participation across the three QDMs (SRQ, ACASI, UCT).

H₁: There is a significant difference in the experience of participation across the three different QDMs (SRQ, ACASI, UCT).

CHAPTER 4 – METHODOLOGY

Research Design

This research forms part of a group of related studies that collectively contributed to a larger study being conducted for a PhD research programme. This particular study focused on one component of the broader study, namely: it compared the disclosure rates of sensitive behaviours in a student population, as an analogue of reliability and validity, using the UCT, ACASI and SRQ. It should be noted here, that the broader research programme involved investigating the disclosure rates of three additional QDMs, namely: UCT2, ICVI and FTFI. The ICVI and FTFI were briefly described in the literature review; the UCT2 method is essentially identical to the original UCT. However, the UCT2 is an adaptation of the UCT method whereby non-sensitive related items are included as opposed to non-sensitive unrelated items, as in the original UCT method. This research is merely concerned with reporting the findings pertaining to the original UCT method; as a result it refers to UCT as just that, instead of UCT1.

The research was conducted in two phases. Firstly, a norming of sensitive behaviour pilot study was conducted using a SRQ (see appendix 1 for questionnaire, and appendix 4 for informed consent letter) to determine what a sensitive question is, and to scale the levels of sensitivity for the sensitive and innocuous items for the study population. As mentioned earlier, sensitive questions are those that concern private, stressful or sacred issues, and which may elicit emotional responses (Lensvelt-Mulders, 2008; McCosker et al., 2001). It was essential to determine what a sensitive question was for the specific student population involved in the broader research programme, so that it could serve to inform the questionnaires that were used within the broader research programme. Sensitivity was operationalized through a stringent process of literature reviews, research team focus groups and brainstorming (Fynn, 2013).

The norming study SRQ contained 186 randomized items. Fifty-six items were sensitive, related to risky sexual behaviour, substance abuse and sexually transmitted infections. Seventy-six items were innocuous, non-sensitive unrelated items. The remaining items were innocuous, related items. The innocuous related items were included in order to cater for another element of the broader research programme that investigated a variation of the UCT, namely: the UCT2. This element of the broader study has been discussed in other sections. Due to the length of the SRQ, four versions of the questionnaire were generated

using a counterbalanced method. This was implemented in order to address the potential effects of response-set bias and response-fatigue variables. It was essential to consider the possibility that research participants may become disinterested or fatigued during the questionnaire completion process, largely due to the length of the questionnaire. Therefore, using a counterbalanced technique allowed for four versions of the same questionnaire to be created, however, the question order was altered slightly for each different version.

The aim of the norming study was to establish what kinds of questions were considered to be sensitive by the University student population. Participants were asked to imagine that each question was true for them. A wide range of questions, ranging in sensitivity, were listed and each participant was required to indicate, according to a 4-point Likert scale, how sensitive they regarded the question to be. Participants were also required to indicate how ashamed they felt if the researchers knew sensitive information about them.

University students were approached on campus to participate in this part of the study. The questionnaire took approximately 15 minutes to complete. The nature of this SRQ was such that it did not ask the participants to disclose any personal sensitive information, it was purely asking for the participants' opinions of what was deemed to be sensitive if the issue were true for them. Information derived from the pilot norming study was correlated according to sensitivity. Items with a correlation of <0.4 were dropped, and only high scoring items were included in the SRQ, ACASI and UCT. Low-scoring innocuous items were included in the SRQ and UCT. Factor Analysis was conducted which provided two distinct categories: sensitive or non-sensitive items.

The sensitive questions revealed in the normative pilot study were used to generate the items for the questionnaires for the SRQ, UCT and ACASI. This was the second phase of the study. This phase of the study involved participants answering sensitive questions regarding risky sexual behaviours and alcohol use using one of the three QDMs. Only questions relating to risky sexual practices and alcohol use were included in this second part of the study, all other items from the norming pilot study were excluded.

Participants were initially allocated to a particular QDM according to a rigorous randomization process. A random number table was generated using computer software from www.randomizer.org. By using this method of randomization, each participant stood an equal chance of being assigned to one of the three QDMs and to one of the domains of sensitivity

(Kelley et al., 2003). This ensured that the research results could be generalised more accurately to the broader student population.

It should be noted that this randomization method proved to be problematic due to the fact that not all QDMs were available for use during each time slot available, as well as the fact that not all researchers were available during each time slot. Another issue with the randomization process was the fact that research participants did not always arrive for the time slot they signed up for. These issues were overcome by assigning research participants to QDMs based on the order in which they arrived at the PsycLab, as well as the availability of QDMs at the time of arrival. Researchers ensured that all QDMs received the correct target number of participants according to the prescribed sampling requirements specified at the onset of the research.

A sub-component of the second phase was to include a social desirability bias measurement, an experience of participation measurement, as well as biographical details (see appendix 3).

Sample

During the norming pilot study, 306 participants were recruited through convenience sampling. All researchers were involved in recruiting students from all 3 major campuses across the University of KwaZulu-Natal, Pietermaritzburg, namely: Main, Humanities and Agricultural and Life Sciences campuses. This ensured that a wide range of students was accessed, thereby providing a more representative sample.

During the main study, research participants were recruited across all major campuses of the University of KwaZulu-Natal, Pietermaritzburg, by means of convenience sampling. All researchers were involved in the recruitment process. Initially research participants were recruited using a roster sheet that required participants to sign up for a specific time and day over the full course of the data collection period. Participants were sent email reminders in order to ensure that they would arrive to participate. The recruitment process rapidly changed to snowball sampling due to the fact that research participants informed other students on campus of the research that was being conducted.

A total of 425 students participated in the three QDMs main study. 105 participants each took part in the SRQ and ACASI modes, whilst 215 participated in the UCT mode. The UCT consisted of four sets. Each set included 52, 52, 59 and 52 participants respectively.

This was in accordance with LaBrie and Earleywine's (2000) recommendation of 40 to 50 participants per set. This ensured optimal data for statistical analyses.

It should be noted that during the course of the data collection and analyses processes it became evident that some research participants had responded incorrectly to some of the questions in the UCT mode. Some participants mistakenly entered letters instead of numbers, or entered numbers that were inconsistent with the potential responses available to them. As a result, the sample size for the UCT was reduced from 215 to 192. The total numbers per form were as follows: form A: 45; form B: 49; form C: 49, and form D: 49.

Apparatus and Materials

This research made use of MediaLab™ software on computers in the PsycLab on the Psychology campus of the University of KwaZulu-Natal, Pietermaritzburg. Information and consent forms were printed on paper so as to afford research participants the opportunity to peruse the information at leisure, as well as the opportunity to contact the researchers in the future if the need arose. The survey instruments that were used included the four different forms of the UCT, the ACASI and the SRQ (see appendix 3 for the survey instruments. Note: the SRQ and ACASI consist of the same items and numbering, therefore one instrument is included in the appendix for both QDMs).

Incentives

Research participants were incentivised with R20,00. This amount was considered appropriate, as it was not excessive thereby preventing undue coercion to participate, yet it was enough to compensate students for the time spent involved in participating in the study.

Ethical Considerations

Informed Consent

Research participants were provided with information and consent sheets (see appendix 4) prior to participating in the study. This ensured that participants were fully aware of the purpose of the study, as well as what was required of them when participating in the study. All participants were afforded the opportunity to make queries, as well as to choose to opt out of participating in the study. All participants were made fully aware that there were no negative consequences to opting out of participation in the study. Emphasis was placed on

the voluntary nature of participating in the study. Participants were required to sign a consent form that indicated their agreement to participate in the study (see appendix 4 for the declaration of consent provided to participants in order to indicate consent).

Confidentiality and Anonymity

Research participants were ensured confidentiality and anonymity due to the fact that limited identifiable information was gained from participants. Demographic information was gained in a generalized manner, separate from participant data, thereby ensuring that no information could be linked to individual participants. The informed consent form was kept separate from the participant data, thereby preserving each individual participant's anonymity.

Further Ethical Considerations

Appendix 4 provides a detailed account of all ethical considerations pertaining to this research. A thorough application to the Humanities and Social Sciences Research Ethics Committee for ethical clearance was completed prior to commencing the research. Approval was granted (see appendix 5). A referral letter from the Child and Family Centre is included (see appendix 6), which catered for the possibility that research participants may require counselling after partaking in the study.

Data Collection

Norming Study

This involved the use of a paper-form SRQ that consisted of 186 items (see appendix 1). The research team chose items to be included in the norming study based on rigorous literature reviews, group discussions and brainstorming. The 186 items were varied in nature: some were considered "sensitive", others were considered "less sensitive but related" and there were some that were considered "non-sensitive". This ensured a wide range of questions were included, thereby catering for a broad understanding of what is considered sensitive in a student population.

Due to the fact that the SRQ consisted of 186 items, a counterbalanced technique was used so as to account for response set and response fatigue. This resulted in four different forms of the norming SRQ, namely: A, B, C and D. Participants were required to respond to questions as if they were true for them, using a 4-point Likert scale.

Social Desirability Scale

Research participants were required to complete a Social Desirability Scale (Hays et al., 1989) at the start of each of the QDM's in the main study (see appendix 3). The scale comprised of five statements, each with a 5- point Likert scale that aimed to assess the participant's likelihood of responding to questions in a socially desirable manner.

SRQ

Participants were randomly assigned to partake in the SRQ mode (see appendix 3). Participants were allocated an individual computer. Questions were presented visually on the computer screen. Participants indicated the answers to questions using the computer keyboard.

UCT

Participants were randomly assigned to one of the four forms of UCT (A, B, C or D) (see appendix 3). Each of the forms comprised of ten datasets with a set of five or six statements within each – dependant on the form. Participants were allocated to an individual computer. Questions were presented via the computer screen. Participants were required to indicate how many of the statements applied to them using the computer keyboard.

ACASI

Participants were randomly assigned to partake in the ACASI mode (see appendix 3). Participants were allocated an individual computer with an audio component that was delivered via a set of headphones. Participants viewed the questions visually on the computer screen, as well as heard the questions audibly. Participants responded to the questions using the computer keyboard.

Experience of Participation

Participants were required to reflect on the experience of participating in the study according to the different QDM's (see appendix 3). Participants completed nine questions using a 5-point Likert scale that investigated what it was like to participate in the study. Questions centred on how comfortable participants felt, and whether they considered their responses to be private, or that it was possible to link their responses back to them.

Data Analysis

The data generated from the norming study was analysed using SPSS statistical software 21, and a factor analysis was conducted. Factor analysis was considered appropriate due to the fact that it allows interactions between variables to be analysed (Tredoux & Durrheim, 2002). The method of extraction was a principal components analysis whereby a varimax rotation with eigen values at >1.0 was used. The data analysis revealed two distinct factors with factor weightings greater than 0.4. The factors that emerged represented distinct sensitive and non-sensitive items. These were then used to contribute to the main study.

The data generated from the main study was entered into Microsoft Excel and coded accordingly. Data was analysed using Microsoft Excel, XLSTAT (2014) statistical software and SPSS statistical software 21. Descriptive analyses and frequency distributions were generated. Ten sensitive items were selected from the broader questionnaire, which consisted of 71 items, and proportionate data was generated on each of the 10 questions in order to compare the base rate estimates across the three different QDMs. The 10 items selected for analysis were done so based upon the original area of interest, as specified in the research proposal. These items related to risky sexual practices and alcohol use. The 10 items are provided in detail in the next chapter – results.

Data was entered into Microsoft Excel where response rates were calculated and converted to percentages so as to allow for comparison across different QDMs. Base rate estimates were calculated for each of the three QDMs. The base rate estimates provide an indication of the number of participants who endorsed the specific sensitive behaviours.

Upon coding and entering data into Microsoft Excel it became apparent that there were a number of spoiled responses within the UCT method. The spoiled responses were excluded from the analyses. This resulted in a smaller sample size for the UCT Method. The sample was reduced to 45, 49, 49 and 49 participants in forms A, B, C and D respectively, resulting in a total of 192 valid responses for the UCT method. This sample remained in accordance with LaBrie and Earleywine's (2000) recommendations.

The base rate estimates for UCT were calculated according to LaBrie and Earleywine's (2000) methodology. This was done as follows: the mean from form B was subtracted from the mean from form A, which provides a p value. P = the proportion of participants who endorsed the sensitive behaviour.

Once the base rate estimates were calculated for each of the three QDMs the data was entered into XLSTAT (2014) statistical software for further analysis. Proportion comparison analyses were conducted in order to provide a comparison of the different proportions of each sensitive item; therefore establishing whether a significant difference in disclosure rates exists between the three QDMs.

The Social Desirability and Experience of Participation scales were analysed using SPSS statistical software 21. ANOVA and Tukey HSD analyses were conducted on all items. ANOVA was considered appropriate because it enables one to test the difference between more than two groups of variables, as well as the influence of more than one independent variable. Tukey HSD was considered appropriate because it enables one to conduct further analyses on the statistically significant results generated from ANOVA (Tredoux & Durrheim, 2002).

Rigour and Reliability

In order to ensure rigour and reliability the following measures were taken: a large sample was attained; participants were allocated to QDMs based on a stringent randomisation process; and a large volume of previous research was reviewed in order to establish the three QDMs to be utilised in this study.

CHAPTER 5 – RESULTS

The Norming Study

Factor analyses performed on the data revealed two domains, namely: sensitive and non-sensitive items. Highest rated items, sensitive or non-sensitive, were extracted and used within the main study. Factor loadings of ≥ 0.4 were used; any items with a loading below this value were excluded. The results of the factor analysis revealed the top 25 non-sensitive items, and the top 20 sensitive items to be used within the main study. The results also revealed 26 items that were non-sensitive, but related items. These items were included in the broader research programme, but were not included in this research. Appendix 2 provides a full account of all sensitive, non-sensitive and non-sensitive but related items.

Sensitive Items

The top 20 sensitive items originated from the norming study. Two of the sensitive items were excluded from the research, namely: “I have taken drugs intravenously (injectable)” and “I have been/am in a sexual relationship mainly for material benefits (e.g. gifts, food, clothes)”. The decision to exclude the first item was due to the fact that the main study was more concerned with alcohol use than intravenous drug use. The decision to exclude the transactional sex item was based upon the fact that a similar item was included in the top 20 sensitive item list, therefore deeming it redundant. The following items replaced these two exclusions: “I am HIV positive” and “I have had more than two sexual partners in the last three months”. These items were considered of greater value because STI’s and risky sexual practices were important topics within the main study.

Whilst all 20 sensitive items were administered across the three different QDM’s, the analysis in this research focused on 10 specific items that were related to risky sexual practices, STI’s and alcohol use within a student population. For the purposes of analytical and interpretative ease, the items were numbered according to the numbering used in ACASI and SRQ. The items selected for analysis were as follows:

5. I am HIV positive.
24. I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).
27. I have engaged in sexual intercourse while under the influence of alcohol that I later regretted.

36. I have had sex with more than two sexual partners in the last three months.
39. I have had sex with someone when I was so drunk that I do not remember it.
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.
44. I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection.
48. I have refused to use a condom.
52. I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.

Sample Demographics

Researchers made every effort to ensure that a representative sample of participants was attained during this study. The following tables indicate the demographic information across the three different QDMs:

Table 1

Gender Demographic Information for SRQ, ACASI and UCT

	SRQ	%	ACASI	%	UCT	%	Total	%
Male	43	40.9%	46	43.8%	57	29.6%	146	36.3%
Female	62	59.0%	59	56.1%	135	70.3%	256	63.6%
Total	105	100%	105	100%	192	100%	402	100%

Whilst the SRQ and ACASI methods indicate a fairly equal distribution of male and female participants, the UCT method indicates an unequal distribution; in that considerably more females than males were included in the sample. Of the total sample, 36.3% were male and 63.6% were female.

Table 2

Race Demographic Information for SRQ, ACASI and UCT

	SRQ	%	ACASI	%	UCT	%	Total	%
Black	89	84.7%	91	86.6%	172	89.5%	352	87.5%
White	10	9.5%	8	7.6%	10	5.2%	28	6.9%
Coloured	4	3.8%	6	5.7%	6	3.1%	16	3.9%
Indian	2	1.9%	0	0%	3	1.5%	5	1.2%
Total	105	100%	105	100%	192	100%	402	100%

It is interesting to compare these racial demographics with those of the national university student populations, as well as the demographic composition of students enrolled at UKZN, Pietermaritzburg campus. Recent research shows that Black students make up 79% of the national student population, White and Coloured students both make up 8.9% of the national student population, and Indian students make up 2.5% of the national student population (Govinder, Zondo, & Makgoba, 2013).

Data pertaining to the demographic composition of the Pietermaritzburg campus of UKZN (The Division of Management Information UKZN, cited in Fynn, 2013) revealed a total number of 9645 students enrolled for the year of 2013. Table 3 below indicates the gender and racial distribution of these students.

Table 3

Demographic Information for UKZN (PMB) Student Population

Gender		Race	
Male	42%	Black	76.95%
Female	58%	White	7.97%
		Coloured	2.22%
		Indian	12.49%
		Other	0.35%

When considering these demographics in comparison to the student sample gained in this research it is clear that Black students are slightly overrepresented and White, Coloured and Indian students are slightly underrepresented

Table 4

Age Demographic Information for SRQ, ACASI and UCT

	SRQ		ACASI		UCT	
18 - 20 years	61	58.0%	57	54.2%	111	57.8%
21 - 23 years	40	38.0%	47	44.7%	75	39.0%
24 - 26 years	2	1.9%	1	0.9%	5	2.6%
27 + years	2	1.9%	0	0%	1	0.5%
Total	105	100%	105	100%	192	100%

Table 5

Year of Study Demographic Information for SRQ, ACASI and UCT

	SRQ		ACASI		UCT	
1st year	62	59.0%	54	59.0%	88	45.8%
2nd year	18	17.1%	23	21.9%	47	24.4%
3rd year	10	9.5%	11	10.4%	33	17.1%
4th+ year	15	14.2%	17	16.1%	24	12.5%
Total	105	100%	105	100%	192	100%

Tables 4 and 5 indicate that the vast majority of research participants were between the ages of 18 and 23 years, and within their first year of tertiary education. Individuals between these ages are considered to be amongst those most at risk for contracting HIV and other STIs due to risky sexual practices (Abels & Blignaut, 2011; Dinkelman, Lam, & Leibbrandt, 2007).

Base Rate Estimates

The base rate estimates were generated using Microsoft Excel. These values indicate the proportion of participants who endorsed the sensitive behaviour. Table 6 reports a summary of the base rate estimates of participants who endorsed the sensitive behaviours across the three QDMs. Some items revealed invalid or negative base rate estimates within the UCT method. This issue has been discussed in greater detail in the literature review.

Five out of the 10 items were not appropriate for analysis due to invalid base rate estimates and negative base rate estimates, or negative proportions. It was not possible to compare invalid or negative proportions with other proportions. Therefore these items were excluded from further comparative analyses. These items could not be analysed further due to the fact that they could not be compared to the base rate estimates from the SRQ and ACASI methods. These findings indicate that there may have been issues in terms of the reliability of the UCT method.

Five out of the 10 items chosen for analysis indicated valid base rate estimates that could be used for further analysis. The valid base rate estimates for each of the three QDMs were analysed further using proportion comparisons in order to determine whether a significant difference exists in response rates between the three QDMs. These results are discussed further in later sections.

Table 6

Base Rate Estimates for UCT, ACASI and SRQ per item

		UCT			ACASI	SRQ
	Sample size (n) per QDM and % of total	192 (47.7%)			105 (26.1%)	105 (26.1%)
Item	Question	Mean _a	Mean _b	Base rate	Base rate	Base rate
5	I am HIV positive.	3.64	2.38	1.26*	0.05	0.03
24	I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).	3.60	2.93	0.67	0.14	0.19
27	I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted.	2.44	3.16	-0.72*	0.29	0.42
36	I have had sex with more than two sexual partners in the last three months.	3.02	2.22	0.8	0.32	0.23
39	I have had sex with someone when I was so drunk that I do not remember it.	2.28	4.02	-1.72*	0.15	0.12
41	I have had sexual intercourse when so under the influence of alcohol that I was unable to consent.	3.36	3.81	-0.45*	0.15	0.11
42	I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol.	3.32	3.24	0.08	0.23	0.22
44	I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection.	2.87	3.22	-0.35*	0.01	0.04
48	I have refused to use a condom.	3.38	3.20	0.18	0.12	0.11
52	I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.	3.67	2.89	0.78	0.16	0.19

* Indicates incalculable values that may not be used for further analysis.

Proportion Comparisons

Proportion comparison analyses were conducted using XLSTAT (2014) statistical software. This analysis allows one to determine whether a significant difference exists between different values. Items 5, 27, 39, 41, and 44 were excluded from this analysis due to incalculable values, as has been mentioned previously. A comparative summary is provided in table 7 below (see appendix 7 for more detailed results).

Table 7

Summary of Proportion Comparison Analysis Results for SRQ, ACASI and UCT

Item	Question	UCT & ACASI	UCT & SRQ	ACASI & SRQ
24	I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).	p=< 0.0001	p=< 0.0001	p=0.835
36	I have had sex with more than two sexual partners in the last three months.	p=< 0.0001	p=< 0.0001	p=0.689
42	I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol.	p=0.060	p=0.087	p=0.947
48	I have refused to use a condom.	p=0.715	p=0.622	p=0.944
52	I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.	p=< 0.0001	p=< 0.0001	p=0.912

Note: $\alpha=0.05$

The proportional comparison analysis reveals that for item 24, “I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)”, there was a significant difference between UCT and ACASI ($p<0.0001 < \alpha=0.05$), and between UCT and SRQ ($p<0.0001 < \alpha=0.05$). Therefore the null hypothesis is rejected due to the fact that a significant difference exists. For item 24 there was no significant difference between ACASI and SRQ ($p=0.835 > \alpha = 0.05$). These results indicate that the null hypothesis fails to be rejected with regard to ACASI and SRQ.

The base rate estimate for item 24 for UCT is 0.67; this may be converted to a percentage of 67%. The base rate estimate for ACASI and SRQ are 0.14 and 0.19 respectively. These are equivalent to 14% and 19% respectively. By examining the base rate estimates together with the proportion comparisons for item 24, it is clear that considerably more research participants endorsed sensitive item 24 in the UCT method than in the ACASI and SRQ methods.

Item 36, “I have had sex with more than two sexual partners in the last three months”, revealed a similar result. A significant difference exists between UCT and ACASI ($p<0.0001 < \alpha=0.05$), and between UCT and SRQ ($p<0.0001 < \alpha=0.05$). Therefore, we reject the null hypothesis with regard to these two comparisons. For item 36, there was no significant difference found between ACASI and SRQ ($p=0.689 > \alpha=0.05$). These results indicate that we fail to reject the null hypothesis.

The base rate estimate for item 36 for UCT was 0.8, which is equivalent to 80%. When compared to ACASI (0.32 = 32%) and SRQ (0.23 = 23%), it is clear that considerably more participants endorsed item 36 in the UCT method than in the ACASI and SRQ methods.

Item 42, “I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol”, revealed no significant difference between any of the three QDMs: UCT and ACASI ($p=0.060 > \alpha=0.05$), UCT and SRQ ($p=0.087 > \alpha=0.05$), and ACASI and SRQ ($p=0.947 > \alpha=0.05$). These results indicate that for item 42 we fail to reject the null hypothesis. The same was true for item 48, “I have refused to use a condom”, which revealed no significant difference between any of the three QDMs: UCT and ACASI ($p=0.715 > \alpha=0.05$), UCT and SRQ ($p=0.622 > \alpha=0.05$), and ACASI and SRQ ($p=0.944 > \alpha=0.05$). These results indicate that for item 48, we fail to reject the null hypothesis.

Item 52, “I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them”, revealed significant differences between UCT and ACASI ($p < 0.0001 < \alpha=0.05$), and between UCT and SRQ ($p < 0.0001 < \alpha=0.05$). Therefore we reject the null hypothesis due to the fact that a significant difference exists. For item 52 there was no significant difference between ACASI and SRQ ($p=0.912 > \alpha = 0.05$). These results indicate that we fail to reject the null hypothesis.

When considering the base rate estimates in conjunction with the proportion comparisons for item 52 it becomes clear that considerably more participants endorsed item 52 in the UCT method than in both the ACASI and SRQ methods. In order to illustrate this point, consider the following for item 52: the UCT base rate estimate of 0.78 equates to 78%, whilst the ACASI base rate estimate of 0.16 equates to 16%, and the SRQ base rate estimate of 0.19 equates to 19%. It is clear that substantially more UCT participants endorsed sensitive item 52 than both ACASI and SRQ participants.

These results indicate that the UCT achieved significantly higher base rate estimates than the SRQ and ACASI methods for three out of the five items analysed.

Social Desirability Scale and Experience of Participation Scale

The social desirability (SD) and experience of participation (EP) scales were analysed using SPSS statistical software 21. ANOVA and Post Hoc Tukey HSD analyses were conducted in order to establish whether or not a significant difference in social desirability

bias and experience of participation existed between the three QDMs. Table 8 below provides the ANOVA results for the social desirability scale.

Table 8

ANOVA results for Social Desirability (SD)

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
SD1	Between Groups	.722	2	.361	.328	.721
	Within Groups	439.619	399	1.102		
	Total	440.341	401			
SD2	Between Groups	.543	2	.271	.159	.853
	Within Groups	681.977	399	1.709		
	Total	682.520	401			
SD3	Between Groups	.305	2	.153	.083	.920
	Within Groups	734.135	399	1.840		
	Total	734.440	401			
SD4	Between Groups	6.765	2	3.383	2.322	.099
	Within Groups	581.188	399	1.457		
	Total	587.953	401			
SD5	Between Groups	1.376	2	.688	.634	.531
	Within Groups	432.892	399	1.085		
	Total	434.269	401			

ANOVA results reveal that there was no significant difference between the three QDMs in terms of social desirability bias for all five items of the social desirability scale (SD1: $p = 0.721 > \alpha = 0.05$) (SD2: $p = 0.853 > \alpha = 0.05$) (SD3: $p = 0.920 > \alpha = 0.05$) (SD4: $p = 0.099 > \alpha = 0.05$) (SD5: $p = 0.531 > \alpha = 0.05$). These results indicate that we fail to reject the null hypothesis for all five social desirability bias items. One may therefore conclude that there is no significant difference in the social desirability bias between the three QDMs (SRQ, ACASI, UCT). This may suggest that participants responded in an equally socially desirable manner across all three QDMs.

Table 9

ANOVA results for Experience of Participation (EP)

		Sum of Squares	df	Mean Square	F	Sig.
EP1	Between Groups	.353	2	.176	.405	.667
	Within Groups	173.789	399	.436		
	Total	174.142	401			
EP2	Between Groups	.152	2	.076	.185	.831
	Within Groups	164.189	399	.412		
	Total	164.341	401			
EP3	Between Groups	.538	2	.269	.440	.644
	Within Groups	243.922	399	.611		
	Total	244.460	401			
EP4	Between Groups	11.592	2	5.796	2.865	.058
	Within Groups	807.125	399	2.023		
	Total	818.716	401			
EP5	Between Groups	.084	2	.042	.072	.931
	Within Groups	233.152	399	.584		
	Total	233.236	401			
EP6	Between Groups	7.645	2	3.822	3.554	.030
	Within Groups	429.174	399	1.076		
	Total	436.818	401			
EP7	Between Groups	14.613	2	7.307	4.064	.018
	Within Groups	717.327	399	1.798		
	Total	731.940	401			
EP8	Between Groups	.386	2	.193	.351	.704
	Within Groups	219.755	399	.551		
	Total	220.142	401			
EP9	Between Groups	1.958	2	.979	1.486	.228
	Within Groups	262.979	399	.659		
	Total	264.938	401			

ANOVA results reveal that for 3 out of the 9 questions there was a significant difference between the three QDMs in terms of experience of participation. The significant difference was found only on questions 4, 6 and 7. ANOVA results reveal that with all other experience of participation questions there was no significant difference between the three QDMs. The following questions revealed significant differences in experience of participation:

4. I felt comfortable responding to the questions in this format.
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.

Post Hoc analysis was conducted using Tukey HSD in order to investigate the significant differences further. Tukey HSD was considered an appropriate analyses due to the fact that it groups variables according to their mean values, which then indicate similarities as well as significant differences amongst the data (Tredoux & Durrheim, 2002). These results are presented in table 10, 11 and 12 below.

Table 10

Tukey HSD for Experience of Participation Question 4 (EP4): I felt comfortable responding to the questions in this format.

EP4

Tukey HSD^{a,b}

QDM	N	Subset for alpha = 0.05	
		1	2
SRQ	105	3.32	
UCT	192	3.65	3.65
ACASI	105		3.77
Sig.		.168	.784

Table 10 indicates that there is a significant difference in experience of participation between SRQ and ACASI. There is satisfactory evidence to reject the null hypothesis. These results indicate that respondents felt more comfortable using the ACASI questionnaire format than the UCT and SRQ formats.

Table 11

Tukey HSD for Experience of Participation Question 6 (EP6): There is no way that my responses could be linked to me as a person.

EP6

Tukey HSD^{a,b}

QDM	N	Subset for alpha = 0.05	
		1	2
ACASI	105	1.69	
SRQ	105	1.89	1.89
UCT	192		2.02
Sig.		.284	.562

Table 11 indicates that there is a significant difference in experience of participation between ACASI and UCT. There is sufficient evidence to reject the null hypothesis. These results also indicate that participants felt that there was no way that their responses could be linked to them as a person when using the UCT format, rather than the SRQ and ACASI formats.

Table 12

Tukey HSD for Experience of Participation Question 7 (EP7): I felt uncomfortable disclosing sensitive information about myself.

EP7

Tukey HSD^{a,b}

QDM	N	Subset for alpha = 0.05	
		1	2
SRQ	105	3.18	
ACASI	105	3.42	3.42
UCT	192		3.64
Sig.		.344	.396

Table 12 indicates that there is a significant difference in experience of participation between SRQ and UCT. There is sufficient evidence to reject the null hypothesis. These results indicate that participants felt more uncomfortable disclosing sensitive information about themselves using the ACASI and SRQ methods than they did using the UCT method. Considering the analysis results for the social desirability and experience of participation scales, it is apparent that no clear trend emerged in terms of a distinct preference for a single QDM. Whilst participants did indicate some preference for UCT in terms of experience of participation, the general trend is non-distinct.

CHAPTER 6 - DISCUSSION

The results of this study have been inconsistent. Whilst significant differences do exist in some areas, there are a number of insignificant results in other areas. However, overall, there was a distinct trend that emerged: in general, the UCT method produced higher base rate estimates than the SRQ and ACASI methods. The social desirability scale revealed no significant differences amongst the three QDMs, whilst the experience of participation scale revealed some significant differences amongst the three QDMs, but no distinct pattern emerged that indicated a clear preferential QDM.

These findings are consistent with LaBrie and Earleywine's (2000) findings that revealed a clear preference for UCT when compared to the SRQ method. Their findings revealed higher disclosure rates of sensitive behaviours when using the UCT method. The findings of this research, as well as LaBrie and Earleywine's findings are inconsistent with the findings of research that focussed on investigating less sensitive behaviours. Droitcour et al. (1991) and Ahart & Sackett, (2004) revealed that when the research topic is of a less sensitive nature, there was no significant difference in response rates between the UCT and SRQ methods. These findings are important for further research that involves investigating less sensitive behaviours.

The findings of this research, together with the findings discussed above indicate that when the research topic is of a sensitive nature, then the UCT may be a highly preferable method. When the research topic is of a less sensitive nature, then the SRQ method may be adequate. Once again, these findings point to the fact that it is imperative to ensure that the QDM suits the research topic of interest. By ensuring that an appropriate QDM is used, it should ensure that the information gained during the research is more accurate and reliable.

It is essential to ensure that participants are protected when the research topic is of a sensitive nature. Participants should feel comfortable disclosing sensitive information; the UCT method has shown to be effective for providing this comfort due to the fact that answers to questions cannot be linked back to participants. This offers participants confidence in knowing that their responses are anonymous. Therefore, disclosure rates may be more accurate, resulting in more valid and reliable research findings.

Disclosure Rates

Overall, the UCT method revealed higher disclosure rates than the ACASI and SRQ methods. These results indicate that, in general, research participants responded in a manner that revealed UCT as a preferential questionnaire format for investigating matters of a sensitive nature. As outlined in the methodology section, this research was concerned with investigating which method/s proved to be reliable and valid for extracting sensitive information from a population by examining the rates of disclosure for each of the QDMs. The disclosure rates served as an analogue for reliability and validity. Therefore, due to the fact that the UCT method resulted in higher disclosure rates of sensitive behaviours, one can conclude that this method is preferable over the ACASI and SRQ methods for obtaining sensitive information. However, it is important to note that the available data for analysis was fairly limited in this study.

For three out of the 10 sensitive items selected for analysis, there was a significant difference between the three QDMs: UCT provided significantly higher base rate estimates than both ACASI and SRQ. For two out of the 10 sensitive items there was no significant difference between any of the three QDMs, and for five out of the 10 sensitive items the analyses could not be conducted due to invalid values. These findings indicate a preference for UCT. However, once again, it is imperative to bear in mind that the data available for analysis was limited. It is problematic to make broad inferences from these results due to the limited amount of valid items available for analysis.

Negative proportions occurred within the UCT method during the analysis phase of the study, this was a potential error as outlined in the literature review. This issue resulted in five out of 10 items being inappropriate for further comparative analyses. As a result, it limited the amount of data that could be used to draw conclusions. Negative proportions can occur due to methodological errors or participants' misunderstandings. This issue is one that should be explored further in future research.

Prevalence Rates of Risky Sexual Practices and Alcohol Use

The base rate estimates were converted to percentages in order to indicate the estimated prevalence rates of risky sexual practices and alcohol use within the student population. Table 13 below provides the base rate estimates and corresponding percentages for each of

the 10 items selected for analysis. Once again, the UCT method contains certain values that were incalculable due to invalid values.

Table 13

Base Rate Estimates and Prevalence Rate Percentages for UCT, ACASI and SRQ

Item	Question	UCT		ACASI		SRQ	
		Base rate	%	Base rate	%	Base rate	%
5	I am HIV positive.	1.26*	-	0.05	5%	0.03	3%
24	I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).	0.67	67%	0.14	14%	0.19	19%
27	I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted.	-0.72*	-	0.29	29%	0.42	42%
36	I have had sex with more than two sexual partners in the last three months.	0.8	80%	0.32	32%	0.23	23%
39	I have had sex with someone when I was so drunk that I do not remember it.	-1.72*	-	0.15	15%	0.12	12%
41	I have had sexual intercourse when so under the influence of alcohol that I was unable to consent.	-0.45*	-	0.15	15%	0.11	11%
42	I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol.	0.08	8%	0.23	23%	0.22	22%
44	I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection.	-0.35*	-	0.01	1%	0.04	4%
48	I have refused to use a condom.	0.18	18%	0.12	12%	0.11	11%
52	I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.	0.78	78%	0.16	16%	0.19	19%

* Represents invalid values

These results indicate interesting findings regarding the estimated prevalence rates of risky sexual practices and alcohol use within a student population. The ACASI and UCT methods indicated a 5% and 3% prevalence rate of HIV positive students respectively (item 5). These prevalence rates are higher than those found during the 2008/9 Higher Education AIDS Programme (HEAIDS) national survey that revealed an overall prevalence rate of 2.4% amongst students at UKZN, compared to a 6.1% HIV prevalence rate amongst the general

population in KwaZulu-Natal (HEAIDS, 2008). It is important to take cognisance of the fact that the HEAIDS survey was conducted in 2008 and 2009, and this research was conducted in 2013.

Item 27, "I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted", revealed prevalence rates of 29% and 42% within the ACASI and SRQ methods respectively. UCT prevalence rates were incalculable due to a negative base rate. These results indicate that within a student population, approximately 29% - 42% of students have engaged in sexual intercourse whilst under the influence of alcohol that they later regretted.

Item 39, "I have had sex with someone when I was so drunk that I do not remember it", revealed prevalence rates of 12% and 15% for ACASI and SRQ respectively. Between 11% and 15% of students revealed that they had been unable to consent to sexual intercourse due to being under the influence of alcohol (item 41) in the ACASI and SRQ methods respectively. Once again, results were not calculable for UCT for both these items.

These findings have important implications for health care providers and policy makers. By understanding the link between sexual practices and alcohol consumption, it may serve to inform sexual health intervention campaigns and educational strategies targeting students.

As outlined previously, previous research shows a correlation between risky sexual practices and alcohol consumption. Alcohol consumption has been linked with decreased use of condoms (Gordon, Carey, & Carey, 1997; LaBrie et al., 2005; McEwan, McCallum, Bhopal, & Madhok, 1992; Seidman & Reider, 1994). The findings of this research indicate that approximately 8% - 23% of students have engaged in unprotected sexual intercourse whilst under the influence of alcohol (item 42). These prevalence rates are in accordance with results from previous research that was conducted in the South African context amongst sexually active adolescents and young adults (aged between 15 and 24 years), which revealed that 23% of research participants admitted to having unprotected sex whilst under the influence of alcohol and/or substances (Morojele et al., 2006).

These results indicate that approximately 23% of the student population engages in unprotected sexual intercourse whilst under the influence of alcohol. Therefore, these students are at much greater risk for contracting HIV or other STIs, as well as unwanted

pregnancies. These findings have major implications for university-based health clinics and university-based intervention strategies.

Item 44, “I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection”, revealed prevalence rates of 1% and 4% for ACASI and SRQ respectively. UCT prevalence rates were incalculable due to a negative base rate estimate.

For comparative purposes, the valid information from table 12 above has been graphically represented below in figure 1.

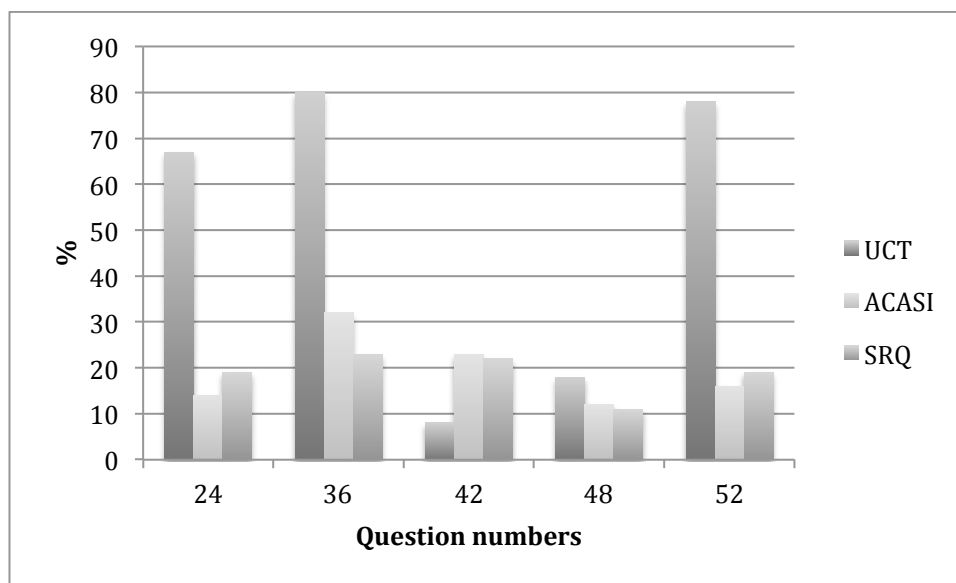


Figure 1 – Graph Comparing Prevalence Rates Between UCT, ACASI and SRQ

Prevalence rates of receiving treatment for sexually transmitted infections (STIs) (item 24) varied considerably across the three QDMs. UCT revealed a prevalence rate of 67%, whilst ACASI and SRQ revealed prevalence rates of 14% and 19% respectively. As mentioned earlier in the results section, these results indicate a significant difference between the three QDMs.

Item 36, “I have had sex with more than two sexual partners in the last three months”, revealed prevalence rates of 80%, 32% and 23% for UCT, ACASI and SRQ respectively. The considerable disparity in these prevalence rates indicates a significant difference in QDMs. These results suggest that UCT may be a preferred method for answering sensitive questions of this nature. Multiple and/or concurrent sexual partners is considered a high-risk behaviour.

These results indicate that a large proportion of students are therefore at greater risk of suffering negative consequences due to multiple and/or concurrent sexual partners.

It is interesting to note that the UCT prevalence rate (of 80%) for multiple sexual partners in the past three months is considerably higher than the prevalence rate (of 39%) found in Abels and Blignaut's (2011) research amongst first year students and the University of the Western Cape.

Item 52, "I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them", revealed prevalence rates of 78%, 16% and 19% for UCT, ACASI and SRQ respectively. Once again, the link between alcohol consumption and decreased condom use is a crucial factor to consider here. With approximately 78% of students attempting to get someone else intoxicated in the hopes of having sexual intercourse with them, it places a large proportion of these individuals at higher risk for negative consequences.

It is possible that the SRQ prevalence rates may be inaccurate due to a number of challenges associated with questionnaire format and extracting sensitive information from research participants. As discussed in the literature review, much research has revealed that SRQs may have questionable reliability and validity for extracting sensitive information from research participants (Brener, Billy & Grady, 2003; Coutts & Jann, 2011; Langhaug et al., 2010; Näher & Krumpal, 2012; Weinhardt et al., 1998). It is interesting to note that the ACASI prevalence rates are fairly close to the SRQ prevalence rates; further research in this area is essential in order to explore this finding in greater detail.

Research Limitations

Social science research in the field of sensitive behaviours is continually expanding. Therefore, one limitation of this research is the fact that, whilst a vast amount of literature has been consulted, it is impossible to ensure that all new literature on the topic is consulted and used to inform the literature review and discussion in this research. New literature continues to be produced on the subject matter.

The researchers anticipated that it might be problematic gaining a large enough sample. Measures were taken to ensure that recruitment was conducted thoroughly, and across a broad range of areas of the University campuses. Another way in which the sample size issue was overcome was by the fact that participants were incentivised with R20.00. The

participants appeared to consider the incentive as a worthwhile compensation for their time. This was evidenced by the ease with which a large enough sample was generated. Additionally, research participants appeared pleased upon receiving the compensation.

The sample gained during this research was slightly distorted in terms of demographic representations, as has been discussed earlier. The sample racial demographics were slightly overrepresented by Black students and slightly underrepresented by White, Coloured and Indian students. This issue could result in the possibility that the findings of this research may not be generalizable to the broader student population. The over and under representations were, however, fairly minimal.

Further anticipated problems included the possibility that some participants may not understand questions or instructions fully and therefore respond incorrectly or inaccurately, or that participants may wish to withdraw from the study after having begun the study. These potential issues highlighted the importance of gaining a large sample; with a large sample it would not be a major cause for concern if participants withdrew from the study, or if participants completed the questionnaires incorrectly. This is because with a large enough sample, any spoiled responses may be excluded from the analysis.

As mentioned previously, five out of the 10 sensitive items were valid for further analysis within the UCT method. This indicates the potential for inaccurate base rate estimates within this method, therefore resulting in inaccurate research results. The issue of negative base rates has been discussed previously. The fact that five out of 10 items were not appropriate for analysis due to negative base rates indicates a limitation of this research. The quantity of invalid values within the UCT method may call into question the reliability of the UCT method in this study.

A further limitation of this study was the fact that some UCT data had to be discarded during the analysis stage due to spoiled responses. Upon inspecting the spoiled responses it became clear that participants exhibited a limited understanding of what was required of them. Some spoiled responses also indicated carelessness on behalf of the participants.

The UCT method repeated a number of questions over again; research participants may have considered this to be redundant and futile. Another issue was the fact that the phrasing of the questions assumed that all research participants were sexually active. For instance: item 53: "I used a condom the last time I had sex". This item assumes that all participants are

sexually active. If a participant was not sexually active and responded “no” to this item, then a proportion of the data generated from this research may have been compromised.

When considering the quality of ACASI and SRQ data, it is clear that research participants found these two methods far easier to understand. Both of these methods resulted in no participant errors. These trends point to the fact that, whilst UCT may be useful for extracting sensitive information, it may also be problematic due to the more complex nature of the questionnaire format. However, it is possible that this issue may have been due to the mode switch between the three sections of the survey, namely: the social desirability scale, the UCT, and the experience of participation. This may have confused participants.

The social desirability bias analysis revealed no significant difference between any of the three QDMs. It is possible that all students responded in a similar manner with regard to social desirability. However, it is also possible that the Hays et al. (1989) social desirability scale may be of questionable validity. This limitation should serve to inform future research that may be concerned with investigating social desirability bias.

Recommendations for Future Research

Future research interested in investigating social desirability bias may be better served using an alternative social desirability scale. Alternatively, future research may be conducted comparing different social desirability scales in order to compare efficacy. Future research may also be focussed on creating a revised version of the Hays et. al. (1989) version.

Future research may consider investigating the UCT method in more depth. Research may focus particularly on data analysis methods in order to provide alternative analyses for UCT data. Further research may also explore the issue of negative base-rates that can occur using this method. Further investigation is needed in this area in order to minimise unusable data and therefore maximise efficiency and accuracy.

With regard to the norming study, the questionnaire proved to be laborious and lengthy. Whilst the information generated from this norming study was useful, it may be important to consider alternative approaches in future research. Additionally, the norming study proved to be complicated in the sense that some research participants found it confusing that they had to assume that all statements were true for them. Future research may consider reducing this confusion by adopting a different approach.

The computer based questionnaires proved to be an interesting and dynamic questionnaire format. Research participants responded well to these formats, and administration of questionnaires was conducted with ease. ACASI, in particular provided participants with a novel and private questionnaire format. Future research may consider adopting more computer-based questionnaire formats, which may be particularly useful for large samples. Of course, computer-based questionnaires do require more expensive equipment than paper-based questionnaires. However, once the initial set-up is established, a vast number of different studies may be conducted using the same equipment.

Future research may also consider the use of internet-based questionnaires. This format may provide interesting findings with regard to disclosure rates of sensitive behaviours. Perhaps research focussing on a comparison of internet-based questionnaires; paper-form SRQs and computer-assisted formats should be explored in the future.

CHAPTER 7 – CONCLUSION

This research was concerned with investigating the disclosure rates of sensitive behaviours within a student population as an analogue of validity and reliability of three questionnaire delivery modes, namely: the UCT, ACASI and SRQ. The sensitive behaviours of interest included risky sexual practices and alcohol use. The study included a pilot norming study in order to establish what a sensitive question was, according to a student population. Following this, the main study compared the disclosure rates of the sensitive items across the three QDMs. A further subsidiary aim was to explore the social desirability bias and experience of participation across the three methods. Additionally, disclosure rates served to indicate estimated prevalence rates of risky sexual practices and alcohol use within a student population.

Research results indicate that, for three out of the five analysable items, there was a significant difference in disclosure rates between the three questionnaire modes. Although the usable data was limited, a clear preference for the UCT method was indicated. Results revealed that there was no significant difference between the three modes in terms of social desirability bias. A significant difference existed with some elements of the experience of participation between the three modes, pointing to a minor preference for the UCT method.

This research has revealed that there are high prevalence rates of STI infections, multiple sexual partners and risky sexual practices linked to alcohol consumption amongst the UKZN student population. These results have important implications for intervention strategies aimed at reducing negative consequences linked to risky sexual practices, and ultimately, intervention strategies aimed at reducing the spread of HIV/AIDS.

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APPENDIX 1 – NORMING STUDY

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
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For example:

Eating pizza				X
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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

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

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, <i>idrop</i>)	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

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

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

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

Non-Sensitive Unrelated Items

1. Use the internet from my cellphone.
2. Have been to Durban.
3. Own at least one cell phone.
4. Own a laptop computer.
5. Drink tea.
6. Watch the news on TV at least 3 times a week.
7. Often watch television late at night.
8. Drink coffee.
9. Had the usual childhood illnesses.
10. Can type reasonably well.
11. Have watched the movie "Tsotsi".
12. Can speak more than 2 languages reasonably well.
13. Have an internet connection at home.
14. Don't normally eat breakfast.
15. Have allergies.
16. Reading is a hobby.
17. Know the name of the premier of KwaZulu-Natal.
18. Am on Facebook.
19. Don't drive when I have been drinking.
20. Use the internet almost every week.
21. Went to a private high school.
22. Know what a "conversion" is in rugby.
23. Subscribe to electronic newsletters.
24. Have taken antibiotics in the last year.
25. Live with my family.

Non-Sensitive Related Items

1. Have gone to the chemist when sick.
2. Have seen any kind of health practitioner in the last year.
3. Have gone to the doctor when sick.

4. Know my HIV status.
5. Drink alcohol in moderation.
6. Have taken antibiotics in the last year.
7. Think sex is ok in a committed relationship.
8. Know about the "morning after" pill.
9. Can drive quite well after two drinks.
10. Have seen a doctor in the last year.
11. Have had diagnostic tests done in the last year.
12. Have been tested for HIV.
13. Have gone to a local clinic when sick.
14. Am careful with my diet.
15. Have often drunk alcohol.
16. Sometimes drink alcohol socially.
17. Have been slightly drunk.
18. Know where to get condoms for free.
19. Have engaged in light petting (kissing, fondling).
20. Know where to get the contraceptive pill.
21. Am careful about risky sex.
22. Take vitamins almost everyday.
23. Have used a condom the last time I had sex.
24. Have felt peer pressure to drink alcohol.
25. Always use condoms when having sex.
26. Have drunk alcohol.

Sensitive Related Items

1. Am HIV positive.
2. Have had more than two sexual partners in the last three months.
3. Have refused to use a condom.
4. Regret having had sex
5. Have had to slap, kick or bite to stop someone having sex with me.
6. Have raped someone together with one or more of my friends.
7. Have had sex with a teacher or lecturer.
8. Have had sex with a partner who was 10 or more years older than me at the time.

9. Have raped someone.
10. Have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, herpes, genital ulcer, idrop).
11. Have had sexual intercourse without a condom being used while under the influence of alcohol.
12. Have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes).
13. Have had unprotected sex while knowing I am HIV positive and/or have a sexually transmitted infection.
14. Have been forced to have sex.
15. Have had sex with someone who isn't a regular partner because I've needed material things (e.g. rent, food, cosmetics).
16. Have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.
17. Have engaged in sexual intercourse while under the influence of alcohol that I later regretted.
18. Have had sexual intercourse when so under the influence of alcohol that I was unable to consent.
19. Have forced someone to have sex with me.
20. Have had sex with someone when I was so drunk that I do not remember it.

APPENDIX 3 – MAIN STUDY INSTRUMENTS

Demographics

Please cross what is applicable:

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

Social Desirability Scale

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

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

UCT Questions

Form A	Form B
Dataset 1	Dataset 1
I am HIV positive	I went to a private high school.
I use the internet from my cell phone	I know what a “conversion” is in rugby.
I have been to Durban	I subscribe to electronic newsletters.
I own at least one cell phone	I live with my family
I own a laptop computer	I have a favourite soccer team
I drink tea	
Dataset 2	Dataset 2
I went to a private high school	I have had more than two sexual partners in the last three months
I know what a “conversion” is in rugby.	I watch the news on TV at least 3 times a week
I subscribe to electronic newsletters.	I often watch television late at night
I live with my family	I drink coffee
I have a favourite soccer team	I had the usual childhood illnesses
	I can type reasonably well
Dataset 3	Dataset 3
I have been forced to have sex	I use the internet from my cell phone
I watch the news on TV at least 3 times a week	I have been to Durban
I often watch television late at night	I own at least one cell phone
I drink coffee	I own a laptop computer
I had the usual childhood illnesses	I drink tea
I can type reasonably well	
Dataset 4	Dataset 4
I have watched the movie “Tsosti”	I have had sex with a partner who was 10 or more years older than me at the time
I can speak more than 2 languages reasonably well	I have watched the movie “Tsosti”
I have an internet connection at home	I can speak more than 2 languages reasonably well
I don’t normally eat breakfast	I have an internet connection at home
I have gone to the Doctor when sick	I don’t normally eat breakfast
	I have gone to the Doctor when sick
Dataset 5	Dataset 5
I have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes)	I think reading is a hobby
I can speak more than 2 languages reasonably well	I know the name of the premier of KwaZulu-Natal
I have an internet connection at home	I am on Facebook
I don’t normally eat breakfast	I don’t drive when I have been drinking
I have gone to the Doctor when sick	I use the internet almost every week

Dataset 6	Dataset 6
I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop	I watch the news on TV at least 3 times a week
I think reading is a hobby	I often watch television late at night
I know the name of the premier of KwaZulu-Natal	I drink coffee
I am on Facebook	I had the usual childhood illnesses
I don't drive when I have been drinking	I can type reasonably well
I use the internet almost every week	
Dataset 7	Dataset 7
I think reading is a hobby	I have had sex with a teacher or lecturer
I know the name of the premier of KwaZulu-Natal	I think reading is a hobby
I am on Facebook	I know the name of the premier of KwaZulu-Natal
I don't drive when I have been drinking	I am on Facebook
I use the internet almost every week	I don't drive when I have been drinking
	I use the internet almost every week
Dataset 8	Dataset 8
I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted	I have watched the movie "Tsosti"
I went to a private high school.	I can speak more than 2 languages reasonably well
I know what a "conversion" is in rugby.	I have an internet connection at home
I subscribe to electronic newsletters.	I don't normally eat breakfast
I live with my family	I have gone to the Doctor when sick
I have a favourite soccer team	
Dataset 9	Dataset 9
I use the internet from my cell phone	I have had sex with someone when I was so drunk that I do not remember it
I have been to Durban	I went to a private high school.
I own at least one cell phone	I know what a "conversion" is in rugby.
I own a laptop computer	I subscribe to electronic newsletters.
I drink tea	I live with my family
	I have a favourite soccer team
Dataset 10	Dataset 10
I have forced someone to have sex with me	I use the internet from my cell phone
I have been to Durban	I have been to Durban
I own at least one cell phone	I own at least one cell phone
I own a laptop computer	I own a laptop computer
I drink tea	I drink tea

Form C	Form D
Dataset 1	Dataset 1
I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics)	I went to a private high school.
I use the internet from my cell phone	I know what a "conversion" is in rugby.
I have been to Durban	I subscribe to electronic newsletters.
I own at least one cell phone	I live with my family
I own a laptop computer	I have a favourite soccer team
I drink tea	
Dataset 2	Dataset 2
I use the internet from my cell phone	I have raped someone together with one or more of my friends
I have been to Durban	I watch the news on TV at least 3 times a week
I own at least one cell phone	I often watch television late at night
I own a laptop computer	I drink coffee
I drink tea	I had the usual childhood illnesses
	I can type reasonably well
Dataset 3	Dataset 3
I have had sexual intercourse when so under the influence of alcohol that I was unable to consent	I use the internet from my cell phone
I watch the news on TV at least 3 times a week	I have been to Durban
I often watch television late at night	I own at least one cell phone
I drink coffee	I own a laptop computer
I had the usual childhood illnesses	I drink tea
I can type reasonably well	
Dataset 4	Dataset 4
I watch the news on TV at least 3 times a week	I have refused to use a condom
I often watch television late at night	I have watched the movie "Tsosti"
I drink coffee	I can speak more than 2 languages reasonably well
I had the usual childhood illnesses	I have an internet connection at home
I can type reasonably well	I don't normally eat breakfast
	I have gone to the Doctor when sick
Dataset 5	Dataset 5
I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol	I watch the news on TV at least 3 times a week
I have watched the movie "Tsosti"	I often watch television late at night
I can speak more than 2 languages reasonably well	I drink coffee
I have an internet connection at home	I had the usual childhood illnesses
I don't normally eat breakfast	I can type reasonably well
I have gone to the Doctor when sick	

Dataset 6	Dataset 6
I have had to slap, kick or bite someone to stop them from having sex with me	I have gone to the Doctor when sick
I think reading is a hobby	I think reading is a hobby
I know the name of the premier of KwaZulu-Natal	I know the name of the premier of KwaZulu-Natal
I am on Facebook	I am on Facebook
I don't drive when I have been drinking	I don't drive when I have been drinking
I use the internet almost every week	
Dataset 7	Dataset 7
I have watched the movie "Tsosti"	I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them
I can speak more than 2 languages reasonably well	I think reading is a hobby
I have an internet connection at home	I know the name of the premier of KwaZulu-Natal
I don't normally eat breakfast	I am on Facebook
I have gone to the Doctor when sick	I don't drive when I have been drinking
	I use the internet almost every week
Dataset 8	Dataset 8
I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection	I had the usual childhood illnesses
I went to a private high school	I can type reasonably well
I know what a "conversion" is in rugby	I have watched the movie "Tsotsi"
I subscribe to electronic newsletters	I can speak more than 2 languages reasonably well
I live with my family	I have an internet connection at home
I have a favourite soccer team	
Dataset 9	Dataset 9
I think reading is a hobby	I regret having had sex
I know the name of the premier of KwaZulu-Natal	I went to a private high school.
I am on Facebook	I know what a "conversion" is in rugby.
I don't drive when I have been drinking	I subscribe to electronic newsletters.
I use the internet almost every week	I live with my family
	I have a favourite soccer team
Dataset 10	Dataset 10
I have raped someone	I think reading is a hobby
I use the internet from my cell phone	I know the name of the premier of KwaZulu-Natal
I have been to Durban	I am on Facebook
I own at least one cell phone	I don't drive when I have been drinking
I own a laptop computer	I use the internet almost every week
I drink tea	

ACASI and SRQ Questions

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).
27. I have felt peer pressure to drink alcohol.
28. 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.

Experience of Participation

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

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

APPENDIX 4 – INFORMED CONSENT

Norming Study

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

Who we are and what we are doing.

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

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

Invitation to participate and implications of participation

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

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

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

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

How your data will be used

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

How you are protected.

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

You may withdraw at any time without any consequence.

In the unlikely event that participation causes you any personal discomfort or distress, you may contact any of the researchers (listed below) for a referral to the counseling service of your

College or to our School's Child and Family Centre. All these contact details are provided below.

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

Kevin Durrheim (durrheim@ukzn.ac.za) or the Chairperson of the UKZN Social Science research Ethics Committee through the secretary Ms. P. Ximba (ximbap@ukzn.ac.za).

Consent

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

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

**Thank you for your willingness to consider this and for your participation.
Researchers and Contact Details for concerns and questions**

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

Main Study

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

Who we are and what we are doing.

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

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

Invitation to participate and implications of participation

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

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

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

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

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

How your data will be used

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

How you are protected.

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

You may withdraw at any time without any consequence.

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

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

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

Thank you for your willingness to consider this and for your participation. Researchers and Contact Details for concerns and questions

Research office: Ms. P. Ximba 031 260 3587

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

Declaration of Consent

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


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

.....

Signature of Participant

Date

APPENDIX 5 – ETHICS APPROVAL



**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 Haysa Shari 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 Technique Type 1 and Type 11, among University of KwaZulu-Natal students.
2. Ref: HSS/0837/013CA, Ms Lauren Stella Pynn 208522353, 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 behaviour in university students, comparing three different questionnaire methods.
4. Ref: HSS/0837/013CA, Ms Chané Visser 209509186, School of Applied Human Sciences – Psychology.
Project Title: Students' rates of disclosure on sensitive sexual behaviour: 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 Sharmila Singh (Acting Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag 954001, Durban, 4000, South Africa.
Telephone: +27 (0)31 260 3587/78350/4557 Facsimile: +27 (0)31 260 4909 Email: ethics@ukzn.ac.za / hrm@ukzn.ac.za / hrm@ukzn.ac.za
Website: www.ukzn.ac.za

Heading Campus:  Durban  Pietermaritzburg  Westville

Heading College:  Durban  Pietermaritzburg  Westville

Heading School:  Durban  Pietermaritzburg  Westville

INSPIRING GREATNESS



Best wishes for the successful completion of your research protocol.

Yours faithfully



Dr Shenika Singh (Acting Chair)

/px

cc Supervisor: Dr Kaymarlin Govender
cc Academic Leader Researcher: Professor D McCracken
cc School Administrator: Mr Sbonelo Duma

APPENDIX 6 – COUNSELLING REFERRAL LETTER



14 March 2013

To whom it may concern

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

Yours sincerely



Professor D.R. Wassenaar

Academic Leader

Discipline of Psychology

School of Applied Human Sciences

APPENDIX 7 – STATISTICAL ANALYSES RESULTS

XLSTAT proportions comparison results

Question 24: I have been treated for an STI

UCT*ACASI

Results:

Parameters	Results
Sample size 1	192
Sample size 2	105
alpha	0.05
Proportion 1	0.67
Proportion 2	0.14
Beta	< 0.0001
Power	1.000

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 0.

For the given parameters, for an alpha of 0.05 and a sample size of 192 observations, the type 2 error is 0 and the power is 1.

UCT*SRQ

Parameters	Results
Sample size 1	192
Sample size 2	105
alpha	0.05
Proportion 1	0.67
Proportion 2	0.19
Beta	< 0.0001
Power	1.000

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 7.376E-11.

For the given parameters, for an alpha of 0.05 and a sample size of 192 observations, the type 2 error is 7.376E-11 and the power is 1.

SRQ*ACASI

Results:

Parameters	Results
Sample size 1	105
Sample size 2	105
alpha	0.05
Proportion 1	0.14
Proportion 2	0.19
Beta	0.835
Power	0.165

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 0.835.

For the given parameters, for an alpha of 0.05 and a sample size of 105 observations, the type 2 error is 0.835 and the power is 0.165.

Question 36: I have had sex with more than two sexual partners in the last three months.

SRQ*ACASI

Results:

Parameters	Results
Sample size 1	105
Sample size 2	105
alpha	0.05
Proportion 1	0.32
Proportion 2	0.23
Beta	0.689
Power	0.311

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 0.689.

For the given parameters, for an alpha of 0.05 and a sample size of 105 observations, the type 2 error is 0.689 and the power is 0.311.

SRQ*UCT

Results

Parameters	Results
Sample size 1	192
Sample size 2	105
alpha	0.05
Proportion 1	0.8
Proportion 2	0.23
Beta	< 0.0001
Power	1.000

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 0.

For the given parameters, for an alpha of 0.05 and a sample size of 192 observations, the type 2 error is 0 and the power is 1.

UCT*ACASI

Results:

Parameters	Results
Sample size 1	192
Sample size 2	105
alpha	0.05
Proportion 1	0.8
Proportion 2	0.32
Beta	< 0.0001
Power	1.000

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 9.097E-11.

For the given parameters, for an alpha of 0.05 and a sample size of 192 observations, the type 2 error is 9.097E-11 and the power is 1.

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

UCT*ACASI

Results:

Parameters	Results
Sample size 1	192
Sample size 2	105
alpha	0.05
Proportion 1	0.08
Proportion 2	0.23
Beta	0.060
Power	0.940

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 0.06.

For the given parameters, for an alpha of 0.05 and a sample size of 192 observations, the type 2 error is 0.06 and the power is 0.94.

UCT*SRQ

Results:

Parameters	Results
Sample size 1	192
Sample size 2	105
alpha	0.05
Proportion 1	0.08
Proportion 2	0.22
Beta	0.087
Power	0.913

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 0.087.

For the given parameters, for an alpha of 0.05 and a sample size of 192 observations, the type 2 error is 0.087 and the power is 0.913.

ACASI*SRQ

Results:

Parameters	Results
Sample size 1	105
Sample size 2	105
alpha	0.05
Proportion 1	0.23
Proportion 2	0.22
Beta	0.947
Power	0.053

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 0.947.

For the given parameters, for an alpha of 0.05 and a sample size of 105 observations, the type 2 error is 0.947 and the power is 0.053.

Question 48: I have refused to use a condom.

ACASI*SRQ

Results:

Parameters	Results
Sample size 1	105
Sample size 2	105
alpha	0.05
Proportion 1	0.12
Proportion 2	0.11
Beta	0.944
Power	0.056

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 0.944.

For the given parameters, for an alpha of 0.05 and a sample size of 105 observations, the type 2 error is 0.944 and the power is 0.056.

ACASI*UCT

Results:

Parameters	Results
Sample size 1	105
Sample size 2	192
alpha	0.05
Proportion 1	0.12
Proportion 2	0.18
Beta	0.715
Power	0.285

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 0.715.

For the given parameters, for an alpha of 0.05 and a sample size of 105 observations, the type 2 error is 0.715 and the power is 0.285.

SRQ*UCT

Results:

Parameters	Results
Sample size 1	105
Sample size 2	192
alpha	0.05
Proportion 1	0.11
Proportion 2	0.18
Beta	0.622
Power	0.378

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 0.622.

For the given parameters, for an alpha of 0.05 and a sample size of 105 observations, the type 2 error is 0.622 and the power is 0.378.

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

Results

ACASI*UCT

Parameters	Results
Sample size 1	105
Sample size 2	192
alpha	0.05
Proportion 1	0.16
Proportion 2	0.78
Beta	< 0.0001
Power	1.000

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 0.

For the given parameters, for an alpha of 0.05 and a sample size of 105 observations, the type 2 error is 0 and the power is 1.

ACASI*SRQ

Results:

Parameters	Results
Sample size 1	105
Sample size 2	105
alpha	0.05
Proportion 1	0.16
Proportion 2	0.19
Beta	0.912
Power	0.088

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 0.912.

For the given parameters, for an alpha of 0.05 and a sample size of 105 observations, the type 2 error is 0.912 and the power is 0.088.

SRQ*UCT

Results:

Parameters	Results
Sample size 1	105
Sample size 2	192
alpha	0.05
Proportion 1	0.19
Proportion 2	0.78
Beta	< 0.0001
Power	1.000

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is different from 0.

The risk to not reject the null hypothesis H0 while it is false is 0.

For the given parameters, for an alpha of 0.05 and a sample size of 105 observations, the type 2 error is 0 and the power is 1.

Post Hoc Analyses for Social Desirability and Experience of Participation

Multiple Comparisons for Social Desirability

Tukey HSD

Dependent Variable	(I) QDM	(J) QDM	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
SD1	SRQ	ACASI	.105	.145	.750	-.24	.45
		UCT	.014	.127	.993	-.29	.31
	ACASI	SRQ	-.105	.145	.750	-.45	.24
		UCT	-.090	.127	.758	-.39	.21
	UCT	SRQ	-.014	.127	.993	-.31	.29
		ACASI	.090	.127	.758	-.21	.39
SD2	SRQ	ACASI	-.057	.180	.946	-.48	.37
		UCT	-.089	.159	.840	-.46	.28
	ACASI	SRQ	.057	.180	.946	-.37	.48
		UCT	-.032	.159	.977	-.41	.34
	UCT	SRQ	.089	.159	.840	-.28	.46
		ACASI	.032	.159	.977	-.34	.41
SD3	SRQ	ACASI	.076	.187	.913	-.36	.52
		UCT	.036	.165	.973	-.35	.42
	ACASI	SRQ	-.076	.187	.913	-.52	.36
		UCT	-.040	.165	.968	-.43	.35
	UCT	SRQ	-.036	.165	.973	-.42	.35
		ACASI	.040	.165	.968	-.35	.43
SD4	SRQ	ACASI	-.343	.167	.100	-.73	.05
		UCT	-.248	.146	.208	-.59	.10
	ACASI	SRQ	.343	.167	.100	-.05	.73
		UCT	.094	.146	.795	-.25	.44
	UCT	SRQ	.248	.146	.208	-.10	.59
		ACASI	-.094	.146	.795	-.44	.25
SD5	SRQ	ACASI	.162	.144	.498	-.18	.50
		UCT	.082	.126	.795	-.22	.38
	ACASI	SRQ	-.162	.144	.498	-.50	.18
		UCT	-.080	.126	.801	-.38	.22
	UCT	SRQ	-.082	.126	.795	-.38	.22
		ACASI	.080	.126	.801	-.22	.38

Multiple Comparisons for Experience of Participation

Tukey HSD

Dependent Variable	(I) QDM	(J) QDM	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
EP1	SRQ	ACASI	-.038	.091	.908	-.25	.18
		UCT	.033	.080	.908	-.15	.22
	ACASI	SRQ	.038	.091	.908	-.18	.25
		UCT	.072	.080	.645	-.12	.26
	UCT	SRQ	-.033	.080	.908	-.22	.15
		ACASI	-.072	.080	.645	-.26	.12
EP2	SRQ	ACASI	.048	.089	.853	-.16	.26
		UCT	.006	.078	.997	-.18	.19
	ACASI	SRQ	-.048	.089	.853	-.26	.16
		UCT	-.042	.078	.852	-.23	.14
	UCT	SRQ	-.006	.078	.997	-.19	.18
		ACASI	.042	.078	.852	-.14	.23
EP3	SRQ	ACASI	-.086	.108	.707	-.34	.17
		UCT	-.004	.095	.999	-.23	.22
	ACASI	SRQ	.086	.108	.707	-.17	.34
		UCT	.082	.095	.664	-.14	.31
	UCT	SRQ	.004	.095	.999	-.22	.23
		ACASI	-.082	.095	.664	-.31	.14
EP4	SRQ	ACASI	-.448	.196	.060	-.91	.01
		UCT	-.327	.173	.141	-.73	.08
	ACASI	SRQ	.448	.196	.060	-.01	.91
		UCT	.120	.173	.765	-.29	.53
	UCT	SRQ	.327	.173	.141	-.08	.73
		ACASI	-.120	.173	.765	-.53	.29
EP5	SRQ	ACASI	-.029	.106	.960	-.28	.22
		UCT	-.035	.093	.927	-.25	.18
	ACASI	SRQ	.029	.106	.960	-.22	.28
		UCT	-.006	.093	.998	-.22	.21
	UCT	SRQ	.035	.093	.927	-.18	.25
		ACASI	.006	.093	.998	-.21	.22

Multiple Comparisons for Experience of Participation

Tukey HSD

Dependent Variable	(I) QDM	(J) QDM	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
EP6	SRQ	ACASI	.200	.143	.343	-.14	.54
		UCT	-.135	.126	.531	-.43	.16
	ACASI	SRQ	-.200	.143	.343	-.54	.14
		UCT	-.335*	.126	.022	-.63	-.04
	UCT	SRQ	.135	.126	.531	-.16	.43
		ACASI	.335*	.126	.022	.04	.63
EP7	SRQ	ACASI	-.238	.185	.404	-.67	.20
		UCT	-.460*	.163	.014	-.84	-.08
	ACASI	SRQ	.238	.185	.404	-.20	.67
		UCT	-.222	.163	.362	-.60	.16
	UCT	SRQ	.460*	.163	.014	.08	.84
		ACASI	.222	.163	.362	-.16	.60
EP8	SRQ	ACASI	.086	.102	.680	-.16	.33
		UCT	.040	.090	.896	-.17	.25
	ACASI	SRQ	-.086	.102	.680	-.33	.16
		UCT	-.046	.090	.869	-.26	.17
	UCT	SRQ	-.040	.090	.896	-.25	.17
		ACASI	.046	.090	.869	-.17	.26
EP9	SRQ	ACASI	.057	.112	.867	-.21	.32
		UCT	-.105	.099	.537	-.34	.13
	ACASI	SRQ	-.057	.112	.867	-.32	.21
		UCT	-.162	.099	.228	-.39	.07
	UCT	SRQ	.105	.099	.537	-.13	.34
		ACASI	.162	.099	.228	-.07	.39

*. The mean difference is significant at the 0.05 level.