Students' rates of disclosure on sensitive sexual behaviours:

A comparative study using methods of the Unmatched Count Technique 1 (UCT 1), Unmatched Count Technique 2 (UCT 2) and Self-Report Questionnaire (SRQ).

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Declaration

Submitted in fulfilment / partial fulfilment of the requirements for the degree of

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Abstract

Sexual behaviour can be seen as sensitive behaviour because it is highly private to the participant and can often be "laden with negative evaluation" (LaBrie & Earleywine, 2000, p. 321). As a consequence, participants may then give socially desirable answers to surveys, interviews or self-reports about sexual behaviours (LaBrie & Earleywine, 2000). However, there is another way of analysing sensitive behaviours that is different from methods used before such as the Self Report Questionnaire, Audio Computer-Assisted Self-Interview, Face To Face Interview and Informal Confidential Voting Interview. This method is known as the Unmatched Count Technique (UCT). The UCT provides a way of asking about sensitive behaviours in an indirect way. If the UCT results in higher base rates, this information could help any researcher or persons working in the health industry to "assess risk within a given population" in order to target interventions, which may be needed for that population (LaBrie & Earleywine, 2000, p. 322).

In research, survey questionnaires have effectively been used to investigate constructs of concern as defined by the researchers and what was considered relevant and problematic within a certain community. Some survey questionnaires measured key constructs such as trait, attitude and behaviour (Abowitz & Toole, 2010). Furthermore, surveys have enabled researchers to study large populations thereby retrieving a large amount of information about that population (Abowitz & Toole, 2010). However, these surveys rely on participants' self-reports rather than their nonverbal behaviour (Abowitz & Toole, 2010). The reliability in survey methods can be found when answers of the participants remain consistent and if the data converges "on a common pattern or result" allowing the researcher to make generalizations about the results (Abowitz & Toole, 2010, p. 110). However, the very nature of how the survey is constructed can be a threat to the validity of the survey and the outcome of the data. For example, if the format of the questions and how the questions are worded influences how the participant will interpret and answer the question, these can result as being problematic to the validity of the survey especially when the survey is not clearly worded (Abowitz & Toole, 2010). In addition, one of the biggest threats to reliability in survey methods is when participants are self-reporting and whether the answers they are reporting are considered to be true or not (Walsh & Braithwaite, 2008). According to Kays, Gathercoal and Buhrow (2012), it was found that many

participants "skew their presentation in order to enhance social desirability" and this is especially the case when being surveyed about sensitive information or behaviour that is considered to be socially undesirable (p. 252). Furthermore, when participants are surveyed about sensitive information, item non-response will be evident as the respondent is concerned "with confidentiality of disclosure, particularly regarding highly sensitive information" (Kays et al., 2012, p. 525). In summary, the survey method of analysing behaviour that is operationalised as sensitive and seen as socially undesirable behaviour, cannot be considered to be completely valid or reliable due to the risk of underreporting or item non-response and several other reasons later discussed in this thesis (Droitcour, Casper, Hubbard, Parsley, Visscher, & Ezzati, 1991).

In past research it has been found that base rates for risky sexual behaviour have been underestimated and many techniques have been researched to combat the underreporting that participants give when asked about risky sexual behaviour (Droitcour, et al., 1991). Survey methods have been viewed as problematic in combating this underreporting of sensitive information as they have been unsuccessful in inspiring trust, resulting in non-response and social desirability bias and therefore regarded as unreliable (Coutts & Jann, 2008). However, one technique that established "higher rates of truthful self-reporting" is the Unmatched-Count Technique 1 (UCT 1) (Walsh & Braithwaite, 2008, p. 49). However, there is another version of the UCT (which, for the purpose of this study, will be referred to as the UCT 2) that could also be more effective and yield higher base rates for self-reporting. This method is proposed by Chaudhuri & Christofides (2007). The UCT 1 is constructed by assigning participants to two independent groups. The one group receives a series of statements that consist of non-sensitive innocuous items and the participants are asked to report how many of these items are true or apply to them (Chaudhuri & Christofides, 2007). The second group will receive the same non-sensitive innocuous items as in the first group; however, one additional statement is added. This statement will be considered as the sensitive item (Dalton, Wimbush, & Daily, 1994). The participants in the second group will also be asked how many of these items are true or apply to them. From these two groups an "estimate of the base rate for the sensitive behavior can be obtained" (Dalton et al., 1994, p. 818). In contrast, the UCT 2 works somewhat differently to the UCT 1. Chaudhuri & Christofides (2007) argues that the participants need to have an increased sense that the items in the list serve a meaningful purpose and thus, the participants will increase their "level of cooperation" (p. 592). Therefore, Chaudhuri &

Christofides (2007) suggests that the innocuous items should not be unrelated to the sensitive item (as in the UCT 1) but should be similar to the sensitive item. This is how the UCT 2 will be constructed within this thesis.

This study forms part of the PhD of the supervisor of the current study. Therefore, there were also several other methods investigated to conclude which one seemed more reliable and valid in assessing what is operationalised as sensitive behaviour. These methods were the Audio Computer Assisted Self-Interview (ACASI), Self-Report Questionnaire (SRQ), Informal Confidential Voting Interview (ICVI) and the Face to Face Interviewing (FTFI). This study will mainly focus on the SRQ and the UCT 1 and UCT 2.

Furthermore, in order to compare the methods, a sensitive behaviour is needed in the completion of this study. The sensitive behaviour this study will focus on is risky sexual practices such as not using a condom, alcohol and risky behaviours and STD's, HIV and Risky Sexual Behaviours. All three of these types of behaviours are contributing to the high rate of HIV/AIDS in South Africa (Ragnarsson, Townsend, Ekström, Chopra, & Thorson, 2010).

Contents

Chapter 1. Introduction

Risky sexual behaviours in South Africa, and in many other countries, have resulted in consequences that are a threat to public health. Consequences such as Sexually Transmitted Diseases (STDs) and HIV/AIDS have become the focus of many research projects. Research in this area is important because of the rapid spread of infection, and resultant high death rate. Death rates are declining somewhat due to Anti-Retroviral Treatment (ART). However, they still remain of concern. Therefore, it is of vital importance to find appropriate methods of assessing risky sexual behaviours. Research in this area can provide crucial information for intervention programmes and health care delivery in general.

In order to understand what constitutes as sensitive behaviours for a specific population, it is imperative to operationalise sensitivity. What is sensitive for one population may not be sensitive for another. Broadly defined, sensitive research can cause potential implications and complications for the participants or the community whom the participants represent (Dickson-Swift, James, & Liamputtong, 2008). Furthermore, topics that deal with the private spheres of people's lives are considered to be sensitive. Previous research shows topics that are concerned with deviant behaviours, sexual behaviours and drug abuse are viewed as sensitive (Dickson-Swift et al., 2008). However, operationalisation of sensitive items varies from person to person, community to community and culture to culture. For this specific reason, it was important to carry out a norming study before the main study was implemented for this research thesis. This allowed the researchers to have a set of sensitive items operationalised by the university students.

The results from the norming study, found sexual behaviours to be defined as sensitive by our study population. Thus, this section will deal with sexual behaviours as a sensitive behaviour. Sexual behaviours can be operationalised as a sensitive behaviour because it is highly private to the participant and can often be "laden with negative evaluation" (LaBrie & Earleywine, 2000, p. 321). As a consequence, participants may then give socially desirable answers, underreport or even misrepresent their responses in surveys, interviews or self-reports about sexual behaviours (LaBrie & Earleywine, 2000). Not only are sexual items seen negatively, people are also concerned about being stigmatised by behavioural traits viewed as taboo or undesirable to others. Furthermore, people seek approval in social interactions, therefore

"people are motivated to avoid stigmatization in order to protect their self- and social identities" (Droitcour et al., 1991, p. 185).

In order to be socially desirable, participants in studies may underreport. To reduce underreporting, researchers have examined a range of alternative methods for extracting sensitive information. These techniques ranged from rigging answer categories in such a way to imply that the socially disapproved behaviours were behaviours many people frequently took part in, loading questions, distribution of secret ballots, increasing the privacy of the study by doing interviews in a confidential location and using introductory items to 'warm' the participants up to the socially disapproved items (Droitcour et al., 1991). However, many of these methods were not strongly reliable and did not have strong validity, especially in assessing sexual behaviours. Therefore, it is important to find a measure that can be more reliable and have greater validity to assess sensitive sexual behaviours and combat response distortion (Droitcour et al., 1991).

One such specific alternative method that is proposed by this research is the Unmatched Count Technique 1 and the Unmatched Count Technique 2. The Unmatched Count Technique (UCT) provides a way of asking about sensitive behaviours (or topics operationalised as sensitive) in an indirect way. In addition, if the outcomes of the UCT results in higher base rates, this information could help any researcher or persons working in the health industry to "assess risk within a given population" in order to target interventions and put into place prevention methods which may be needed for that population (LaBrie & Earleywine, 2000, p. 322).

The following study is a comparative study, which aims to find a method that will effectively yield higher base rates for the sensitive items, as well as identifying a method that may be valuable for future research in sensitive behaviours.
Furthermore, this current study is part of a suite of related studies that collectively constitute a much larger study being conducted for a PhD research programme. This study will focus on a component of the larger study.

Chapter 2. An Introduction to the Literature

Behavioural research plays an important role in explaining, predicting and describing human behaviour; therefore, the designs used in behavioural research needs to fulfill the criteria of being valid and reliable (Kays et al., 2012; Einarsen & Våland, 2010). Furthermore, gaining more information about sensitive topics such as "understanding the transmission dynamics of Sexually Transmitted Infections (STIs)" or sexual behaviours, can be found to lie at the heart of behavioural research (Fenton, Johnson, McManus & Erens, 2001, p. 84). However, in past research, base rates for risky sexual behaviours have been underestimated and underreported by the participants. Many techniques (such as face to face interviews (FTFI), Audio Computer-Assisted Self-Interview (ACASI), Informal Confidential Voting Interview (ICVI) and self-report surveys) have been used in previous research in order to address the issue of underreporting (Droitcour et al., 1991). In preventing underreporting, stronger techniques are needed to yield in higher base rates for studies researching the disclosure of sensitive information. Therefore, this thesis has compared three possible methods (self-reporting questionnaires (SRQ), the Unmatched Count Technique 1 (UCT 1) and the Unmatched Count Technique 2 (UCT 2)) to evaluate which of these result in higher base rates according to the specific sensitive behavioural topics chosen and also which of these will be the most effective to use in future research.

The following sections of the literature review will look closely at the three methods mentioned above (SRQ, UCT 1 and UCT 2). Each of these methods will be described in depth by looking at why they were formed and the advantages and disadvantages of using these methods. Moreover, the reliability and validity will be looked at by referring to sensitive behavioural research and how each of these methods do inspire (or do not inspire) trust, anonymity, self-disclosure and social desirability.

2.1. In search of a reliable measurement of Sensitive Behaviours

2.1.1. Self-Report Questionnaire (SRQ)

Self-report surveys or questionnaires are the most widely used method in social sciences (Hackett, 1981; Bostoen, Bilukha, Fenn, Morgan, Tam, ter Veen & Checchi, 2007). Surveys can be seen as a useful tool for investigating behaviours and attitudes of a specific population (Mandal, Eaden, Mayberry, & Mayberry, 2000). According to Kays et al. (2012), some of the advantages of using surveys are that they "allow for the collection of large amounts of data with less expense and time" (p. 251). Surveys predominantly rely on participants' self-reports rather than their nonverbal behaviour (Abowitz & Toole, 2010).

Survey methods have been used to also predict and define some aspects of human behaviour (Mandal et al., 2000). One very interesting aspect of human behaviour is sexual behaviour (Fenton et al., 2001). Sexual behaviour can be seen as a sensitive behaviour because it is highly private to the participant and can viewed as taboo or negative by other people (LaBrie & Earleywine, 2000). Furthermore, because of the very nature of self-disclosure on sexual behaviour it becomes a challenge for surveys to generate and report precise and unbiased data "of individual and population behaviour patterns" (Fenton et al., 2001, p. 84). However, surveys can be a source of valid and reliable data. In doing research with surveys, if the survey measure what they are supposed to measure, then the survey can be seen as valid (Abowitz & Toole, 2010). Moreover, the validity of the survey can be determined through face, content, construct and predictive validity (Etchegaray & Fischer, 2010). Reliability of the survey can be found when answers of the participants remain consistent and if the data converges either negatively or positively (Abowitz & Toole, 2010). More importantly is consistency within a research project and this can be achieved by providing clear wording and to explain how the answers of the survey were interpreted by the researcher (Abowitz & Toole, 2010).

Although surveys can be reliable and valid, some inconsistency in surveys does happen when the data is self-reported by the participants (Abowitz & Toole, 2010). Inconsistency can result as the self-reported data is "inherently subjective and may reflect changing individual biases and inaccuracies" (Abowitz & Toole, 2010, p. 111). This is problematic in collecting

data on topics of a sensitive nature if the responses are self-reported and relies on the subjectivity of the participant (Abowitz & Toole, 2010). Also, self-reported surveys will reflect the participant's opinion on a topic and this opinion might be an inflated opinion that is either biased towards being socially desirable, or it is completely false (Abowitz & Toole, 2010). According to Kays et al. (2012), it was found that many participants "skew their presentation in order to enhance social desirability" and this is especially the case when being surveyed about sensitive information (p. 252). Furthermore, when participants are surveyed about sensitive information, item non-response will be evident as the respondent is concerned "with confidentiality of disclosure, particularly regarding highly sensitive information" (Kays et al., 2012, p. 525).

For the remainder of this section, three ways in how participants might likely perceive questions on sensitive topics will be discussed. According to Einarsen & Våland (2010), the three ways in which participants are likely to perceive sensitive questions are intrusiveness, social desirability and threat of disclosure.

1.1) *Intrusiveness*

Some questions on sensitive topics may be perceived to be a taboo or contain inappropriate information for the participant. These questions may also be seen as an invasion of privacy and offensive (Einarsen & Våland, 2010). In addition, what is important here is to note that it is not the answer itself that presents the sensitivity but the actual question that is laden with sensitivity (Einarsen & Våland, 2010).

1.2) *Social Desirability*

When a participant answers in a socially desirable manner it is often seen as answering in a manner that proclaims a "desired behaviour or attitude normative accepted in the respondent's society" (Einarsen & Våland, 2010, p. 3). Furthermore, answering in a socially desirable manner is to deny or hide a certain behaviour that might be seen as undesirable in that society (Einarsen & Våland, 2010). Research that investigates sensitive behaviours involves asking participants if they have ever violated social norms. As a result, participants may choose to respond in a manner that underestimates what they would do in an undesirable situation, or overestimate what they would do in a desirable situation. As a consequence, socially desirable responding poses a threat to the validity and reliability of social science research.

1.3) *Threat of Disclosure*

Threat of disclosure might be experienced by the participant when they fear that the information they have given in the surveys will be given to a third party (someone in a superior position). In addition, to combat threat of disclosure and expectation of being reprimanded, the participant might hesitate to answer truthfully and this could lead to inaccurate and underreporting in the survey (Einarsen & Våland, 2010). This poses a threat to the validity of the study (Einarsen & Våland, 2010).

In conclusion, when concerned about sensitive information, survey methods have been viewed as problematic in combating this underreporting of sensitive information as they have been unsuccessful by not inspiring trust, result in non-response and social desirability bias and become unreliable (Coutts & Jann, 2008). Furthermore, when researching behaviours that are taboo or embarrassing with surveys, the accuracy of the outcomes has been questioned (Arentoft, Van Dyk, Thomas, Sayengh, Thaler, Schonfeld, LaBrie & Hinkin, 2016). However, one technique that established "higher rates of truthful self-reporting" is the Unmatched-Count Technique (UCT) (Walsh & Braithwaite, 2008, p. 49). Therefore, the following section will discuss methods of indirect questions as they are seen to inspire trust, anonymity and allow the participant to have more security in disclosing information about sensitive behaviours. Firstly, the following sections will discuss the history of indirect questioning and how the method of the UCT was formed from previous methods of indirect questioning. Secondly, the UCT 1 will be discussed as a possible method to measure sensitive behaviour. Lastly, the UCT 2 will be mentioned as a modified version of the UCT 1 that could possibly result in higher base rates and be more reliable than the UCT 1.

2.1.2. History of Indirect Methods of Questioning

In reaction to socially desirable responses, underreporting, intrusiveness, threat of disclosure and response distortion, a variety of indirect survey based techniques were developed in the 1960s (Droitcour et al., 1991). The purpose of indirect measurements were to allow for the elimination of the participant to reveal whether they actually engaged in the behaviour deemed socially undesirable. As a result the level of self-disclosure was lowered and anonymity was increased. In addition, these indirect ways of measuring behaviour required information to be collected from larger groups of people to provide "statistically unbiased prevalence estimate for the population as a whole" (Droitcour et al., 1991, p. 186). As mentioned above, a variety of indirect methods were devised; however, this thesis briefly discusses three methods and concludes with the development of the Unmatched Count Technique.

Randomised Response Technique

The first of these methods is known as the randomised response technique. Using this technique a random device is given to a participant to obtain a secret question, which only the participant knows (and the researcher does not know). The participant then interacts with the device, also known as throwing a dice, and the outcome of the device determines the participant to respond true or false to the given question (Droitcour et al., 1991). In addition, the probabilities of the false and true answers needed to be known and set at unequal values; thus, resulting in a statistically unbiased estimate (Droitcour et al., 1991). However, a drawback of this technique is that it results in a high variance (Droitcour et al., 1991).

Another way of looking at the RRT, is by viewing it as a method used by pairing an unthreatening question with a sensitive question of interest in research. The participant will use a randomised device that will determine if the participant will answer the unthreatening question or the sensitive question. The outcome of the randomizing device is only known by the participant (Coutts & Jann, 2008). As a result, the proportion of the participants who have engaged in the sensitive item "can be calculated with knowledge of the properties of the randomizing device (Coutts & Jann, 2008, p. 4). Compared to methods of direct questioning, literature has shown that the RRT has resulted in higher prevalence rate estimates of socially undesirable behaviours. The RRT can be used through telephonic interviews or surveys, face-

to-face interviews, mail questionnaires and so on. These different modes in which the RRT can be used is called 'mode-effects' or "differing use of the methods across modes of administration" to determine the response validity of the outcome of the method (Coutts & Jann, 2008, p. 4). However, the modes in which the RRT is administered can guarantee whether the participant answers in a more truthful manner or in a socially desirable manner (Coutts & Jann, 2008). For example, in a group survey that inspires an anonymous condition a participant may feel that they can appear to have more anonymity (and answer more truthfully) than in a mail survey (inspiring a non-anonymous condition) where the participant can be traced (Coutts & Jann, 2008).

The RRT can be used to measure sensitive behaviours. However, there are limitations to this method. According to Coutts and Jann (2008), when using the RRT, it inspires non-response, limited trust and the prevalence estimates are unreliable for sensitive questions. Another problematic issue is the randomizing device. For the participant the "randomizing device must be implemented in a way that makes the protection offered by the technique clear to the respondent" (Coutts & Jann, 2008, p. 6). Therefore, the randomising device must be seen as truly random otherwise it will appear to be too complex and the participants might then doubt the procedure (Coutts & Jann, 2008). Lastly, some studies have found the response rates for the RRT to be lower than the direct questioning of self-report questionnaires. Some of the reasons for this could be that the technique is time consuming, complex, causes frustrations amongst the participants in answering irrelevant questions, and not having a randomised device at hand (Coutts & Jann, 2008).

Aggregated Response

The second indirect method is known as the aggregated response. With this method the participants were instructed to add a random number to their sensitive answer. Here one group of participants added the answers to two quantitative questions; however, participants in another group subtracted one answer from another (Droitcour et al., 1991). Hence, the means of the two groups were then combined and resulted in an estimate of the population mean. In addition, this method results in a lower variance as compared to the first method mentioned above (Droitcour et al., 1991).

Normative Technique

The third method is known as the normative technique. Participants participating in this technique do not report on their own experience, but instead they are prompted to report on other people's experiences.

The UCT

The UCT or item count method can be found to be embedded in the techniques described above. The following section will look again at each of these techniques and describe how the UCT was formed from that technique. For the randomised response, the item count technique's double list questions, also known as subsample A, has 3 innocuous items including the sensitive item (socially disapproved behaviour) and subsample B that only has the 3 innocuous items- removing the sensitive behaviour; can be viewed as similar to a version of the unrelated questions of the randomised response technique (Droitcour et al., 1991). Secondly, like the aggregated response technique, the item count presents the participant with a list and asks them how many of the items on the list apply to them (Glynn, 2010). Thirdly, unlike the normative technique, the item count asks the participant to report on their own behaviours instead of reporting on other participants' experiences (Droitcour et al., 1991).

The following section will look specifically at a case study that compares the RRT against the UCT in measuring sensitive items. The criteria used to evaluate the outcome of the case study are as follows: the first criteria will look at respondent trust; the second criteria will look at prevalence estimates, thirdly the last criteria will evaluate ease of use (Coutts & Jann, 2008).

Case Study: Random Response Techinque (RRT) versus Unmatched Count Technique (UCT)

In one of the articles written by Coutts and Jann (2008), a comparison is made between the RRT and the UCT methods in measuring sensitive items. In this study the RRT is applied through a computer-administered setting. For the RRT the participants were instructed to use the randomising device (electronic coin toss, banknote serial numbers, manual coin toss or telephone numbers) and depending on the outcome of the randomising device, the participants would either "answer the sensitive question truthfully or automatically provide a 'yes' answer" (Coutts & Jann, 2008, p. 10). The RRT was designed in such a way as to result in a forced-response "where the probability of being directed to answer the sensitive question was one half" (Coutts & Jann, 2008, p. 10). Therefore, the probability with the outcome of

answering a sensitive question or non-sensitive question was fifty percent. By way of contrast, the UCT was designed with six sets of statements resulting in one statement per sensitive question. All the participants in the UCT study responded to both of the sets that contained the non-sensitive behaviour and the sensitive behaviour (Coutts & Jann, 2008). Furthermore, Coutts and Jann (2008) evaluated the RRT and the UCT according to the outcome of the estimates, respondent trust in the methods and the ease of use of the methods. The following section will discuss the outcomes according to these evaluations from the case study.

The first outcome Coutts and Jann (2008) looked at was the ease of use of the methods in the light of the instructions given for each method. If the instructions were not clear to the participant, potential bias could occur. For the RRT the instructions for the procedure were long and complex. In contrast, the UCT was less complex. Furthermore, the ease of use of the methods was also shown in the time it took the participants to complete the study (Coutts & Jann, 2008). The second outcome focused on the participants' trust in the methods. Trust was assessed by the protection the methods offered the participants. To evaluate if the methods inspired trust, Coutts and Jann (2008) looked at the responses to see if they were influenced by social desirability or non-response if the participants were suspicious of the methods and felt that it did not protect their identity or anonymity. In addition, Coutts and Jann (2008) mentioned the factor of non-response as one of their findings especially in the RRT. The randomising devices of the banknotes, telephone numbers and manual coin toss resulted as problematic to the study. These procedures were not easily understood by the participants; hence, the response time and non-response increased. However, compared to the RRT, the UCT fared better in item non-response, response time and inspiring trust (Coutts & Jann, 2008). The last outcome focused on the estimates of each of the methods. The RRT was found to be used incorrectly by some participants as "strongly negative estimates are observed" (Coutts & Jann, 2008, p. 18). The negative estimates are referred to as a 'no' response when an automatic 'yes' response should have been provided. These 'no' responses could have been a result of the participants fearing that their responses would have been viewed as an admission of guilt (Coutts & Jann, 2008). Therefore, in this study the estimate outcomes for the RRT resulted in underestimating the rates of the sensitive behaviours. In contrast, the UCT resulted in more reasonable estimates than the RRT that clearly provided bias estimates (Coutts & Jann, 2008). However, Coutts and Jann (2008) noted that for the

UCT researchers must be aware that this method has a large standard error and high sampling variance. As a last note, the RRT has less face validity than the UCT (Coutts & Jann, 2008).

In conclusion to the case study, the overall results concurred that the UCT is the better method to use in comparison to the RRT. The outcome of the RRT raised some concern about the reliability and validity of the method. One of the concerns were participant non-compliance with the instructions of the RRT; thus, resulting in a negative prevalence estimate rate. These trends of outcomes have been noticed in other forced-choice methods. Furthermore, non-compliance with forced-choice method instructions has increased the sensitivity of the question being studied. In these situations, the participants "clearly feel as if they are being asked to answer the sensitive question with a "yes"" instead of reacting to the product of the randomising device (Coutts & Jann, 2008, p. 22). One specific randomising device that lacked the trust of the participants was the electronic coin toss. This method provided higher prevalence estimates compared to the other RRT randomising devices used in the case study. The lack of trust from the participants could result from the participants thinking that their outcomes were recorded electronically (Coutts & Jann, 2008). In addition, the electronic coin toss was perceived to be not that useful for this case study "because it provides no benefit over direct questioning" methods (Coutts & Jann, 2008, p. 22).

Another conclusion derived from using the RRT, was that the generation of the method seemed to be time-consuming as this imposed a strong cost on the participants. This was evident through the high reaction times to the methods. As a result, this "might lead respondent to ask why they should go the greater effort required to answer the RRT questions" (Coutts & Jann, 2008, p. 22).

In comparison, the case study saw the UCT method as more promising in a self-administered setting. However, the UCT does not come without any faults. There is still a lot of work and research to be done on this technique to ensure for optimal implementation of the method (Coutts & Jann, 2008). Overall as stated before, the UCT fared better than the RRT as its non-response was limited and almost non-existent; the instructions were better understood by the participants compared to the RRT; and, there was guaranteed anonymity to the answers of the participants (Coutts & Jann, 2008).

Thus this thesis took an interest in the UCT and applying this method in researching sensitive behaviour in aiming to find a better valid and reliable method in this type of research. The following sections will discuss the UCT in more depth.

2.1.3. Unmatched Count Technique 1 (UCT 1)

In 1965, indirect questioning was explored in surveys. The manner of indirect questioning allows the participant to reveal in an indirect manner whether they engaged in the sensitive behaviour under investigation (Droitcour et al., 1991). One technique that makes use of indirect questioning is the Unmatched Count Technique (UCT 1). The UCT 1 is an indirect way of asking questions about sensitive behaviour and this could provide more "accurate reporting than other methods" (LaBrie & Earleywine, 2000, p. 321). The reporting of accurate base rates could in return become fundamental to the designing of interventions (Dalton, Wimbush, & Daily, 1994; Starosta & Earlywine, 2014). Furthermore, collecting sensitive data in a manner which provides absolute anonymity is what the UCT 1 aims to do (Dalton et al., 1994). This approach can provide "complete disclosure without deceiving subjects" (Dalton et al., 1994, p. 818). Using this method the researcher is unable to disclose individual data to any agencies or law enforcement because of anonymity (Dalton et al., 1994). However, the UCT 1 is not a good method to use in determining individual-level sensitive behaviour because it works in bigger groups because of the anonymity it has to offer (Dalton et al., 1994). Also, there is no empirical research validating the UCT 1 (Dalton et al., 1994). Furthermore, the base rates of the UCT 1 are approximations; therefore, the percentages should not be reported as exact numbers. Although this is the case, the base rates estimated by the UCT 1 are better estimates "than those provided by more conventional survey methods" (Dalton et al., 1994, p. 825).

According to LaBrie and Earleywine (2000), it can often be observed that there is a correlation between sexual behaviour and alcohol consumption. For many years researchers have looked at this association and tried to find other factors that also correlate with sensitive behaviours that can place people at risk "for these negative outcomes", such as Sexually Transmitted Diseases (STDs) and HIV/AIDS (LaBrie & Earleywine, 2000, p. 321). In addition, if research is well conducted, the impact that the UCT 1 can have will be valuable

for public policy and organisational outcomes (Dalton et al., 1994). When research is restricted to areas that do not raise questions about socially sensitive issues, this research becomes limited (Dalton et al., 1994).

2.1) How the UCT 1 works

The basis of the UCT 1 and how it works are that participants are randomly assigned into two groups. One of the two groups will receive a series of non-sensitive innocuous items. The participants in this group are then asked how many of these items are true to them (Chaudhuri & Christofides, 2007). What is of utmost importance here is that the participant will indicate *how* many statements are true to them and not indicate the *exact* statements that are true to them (Dalton et al., 1994). The second group of participants will receive the same non-sensitive innocuous items as in the first group; however, one additional statement is added. This statement will be considered as the sensitive item (Dalton et al., 1994). The participants will also be asked (as in the first group) how many of these statements are true to them (Dalton et al., 1994). Furthermore, these two groups are randomly assigned; thus, the differences in the mean responses "of these two groups must be a function of some persons in the second group indicating agreement with the sensitive statement" (Dalton et al., 1994, p. 818). From this, the researcher can then work on an estimate of the base rate of the sensitive behaviour (Dalton et al., 1994).

2.2) An Example of the UCT 1

The first group of participants will complete form one. The second group of participants will complete form 2 which includes the sensitive item.

Table to show set up for UCT 1

Form 1	Form 2
Innocuous unrelated item	Innocuous unrelated item
Innocuous unrelated item	Innocuous unrelated item
Innocuous unrelated item	Innocuous unrelated item
	Sensitive Item
Innocuous unrelated item	Innocuous unrelated item
	Innocuous unrelated item

2.3) Reliability and Validity of the UCT 1

There has been some discomfort about the reliability reported by Dalton et al. (1994) such as the groups being composed of fewer than 50 participants as the UCT 1 does not allow assessment on an individual basis. As stated earlier, the UCT 1 best performs if the group of participants involved in the study is a large group with a minimum participation of 50 participants (LaBrie & Earleywine, 2000; Dalton et al., 1994). Furthermore, the results for the control items and the logic of the techniques the UCT 1 uses is what researchers rely on as there are no empirical evidence or research validating the UCT 1 (Dalton et al., 1994).

Importance of this research

However, in light of these limitations, the UCT 1 provides a step into the direction of sensitive research (Dalton et al., 1994). Research that is conducted in sensitive areas may well have an impact in public policy and organisational outcomes (Dalton et al., 1994). Any research that is restricted and does not have reliable methods becomes limited research and also does not allow to increase the quality of life for people in society. In addition, another modified method of the UCT 1 has been suggested to improve on the limitations of the current UCT 1 and could result in even more effectively conducting research into sensitive areas. For the purpose of this thesis this modified method of the UCT 1 will be named the UCT 2 suggested by Chaudhuri & Christofides (2007).

2.1.4. Unmatched Count Technique 2 (UCT 2)

In their paper, Chaudhuri & Christofides (2007) suggest that the list of items for both groups could create confusion or suspicion and views this as a limitation to the outcome of the UCT 1. Furthermore, these limitations can be eliminated by providing an appropriate layout of the lists (Chaudhuri & Christofides, 2007). The UCT 2 works exactly the same way as the UCT 1 but the aim of the UCT 2 would be to increase "the sense that the list of items serves a meaningful purpose and therefore increase the level of cooperation of the participants" (Chaudhuri & Christofides , 2007, p. 592). Therefore, Chaudhuri & Christofides (2007) suggests that the innocuous items should not be unrelated to the sensitive item (as in the UCT 1) but should be similar to the sensitive item. This is how the UCT 2 was constructed in this thesis. The number of items reported that are true to the participants would give them the

impression that it is a "meaningful piece of information" (Chaudhuri & Christofides, 2007, p. 592). In conclusion, this possible improvement on the UCT 1, as stated above, could improve research into the areas of sensitive behaviours and present more reliable base rates in order to help design effective interventions (Dalton et al., 1994).

3.1) Example of the UCT 2

The first group of participants completed form one. Whereas the second group of participants completed form two which contains items similar to the sensitive item and the sensitive item itself.

Table to show set up for UCT 2

Form 1	Form 2
Innocuous unrelated item	Related item
Innocuous unrelated item	Related item
Innocuous unrelated item	Related item
	Sensitive Item
Innocuous unrelated item	Related Item
Innocuous unrelated item	Related item

2.2. Sensitive Behaviours

Operationalising Sensitivity

In order to understand the context of this study, it was important to operationalise what constitutes as sensitive research. Operationalising sensitive behaviours in research brings to light different kinds of issues to be considered as there are many behaviours that are considered sensitive. Furthermore, measuring these different behaviours becomes a general problem in social science research as the 'sensitivity' of the behaviours are differently defined by specific contexts and cultures.

According to a paper written by Dickson-Swift, James and Liamputtong (2008), sensitive research in social science can broadly and shortly be defined as research that is perceived to have potential implications and complications for either the participants who are directly involved in the research or the community that the participants represent. Research focusing on sensitive topics has been found to be related to topics that are considered to be taboo. Taboo here can be defined as topics which inspire feelings of dread, awe or are laden with emotions (Dickson-Swift et al., 2008). Furthermore, some items that are perceived as sensitive can be deviant behaviours, death, drug abuse or sexual behaviour (Dickson-Swift et al., 2008). In addition, topics that study the private spheres of people's lives are also operationalised as sensitive topics; however, what can be viewed as private in these spheres is dependent upon the culture, age, gender, and situations of the participants involved in the research study (Dickson-Swift et al., 2008).

This thesis used the following definition to operationalise 'sensitive behaviour': "sensitive research is research which potentially poses a substantial threat to those who are or have been involved in it" (Dickson-Swift et al., 2008, p. 2). From this definition there are three areas in which sensitive research can be seen as threatening. These are namely: threat of sanction; intrusive threat; and lastly, political threat. The first of these, threat of sanction, can refer to the possibility that the research may reveal something which is considered to be incriminating or stigmatizing to the participant. For the purposes of the study this means for example that the participant can be viewed as 'less of a man' when he wears a condom. Secondly, intrusive threat looks at areas that are perceived to be stressful, sacred or private to the participant, for example, their HIV status or the engagement in risky sexual behaviours. Lastly, political

threat may be referred to topics the researchers are studying in areas of social conflict and controversy in society (Dickson-Swift et al., 2008).

Research in the field of sensitive behaviours can be difficult due to the fact that sensitivity needs to be operationalised. It is useful for researchers to consult previous research in order to identify topics that are considered sensitive for various populations. Having stated this, researchers should take caution and also operationalise what is considered as sensitive within their own community of study participants and not to standardize sensitive behaviours across participants from different communities (Dickson-Swift et al., 2008). To conclude, sensitive research can be difficult to undertake as it encompasses a wide range of topics and have a variety of methods to analyse these topics (Dickson-Swift et al., 2008). This broad view of looking at sensitive research makes it difficult to have one generic definition of what is considered sensitive as this can differ from one community to the next. Therefore, this thesis carried out a normative study to operationalise sensitive items within the community of university students. The following sections will look at sensitive behaviours such as risky sexual behaviours, condom use and HIV/ AIDS founded from the normative study, how they are applicable in South Africa today and why they should be considered as important.

2.2.1. Introduction to sensitive behaviours: South Africa and HIV/AIDS

Over the past few years the rise of HIV/AIDS has been dramatic in South Africa. Men and women are placed at an increased risk for poor health outcomes by the rapid changes in society and economic hardships (Ragnarsson et al., 2010). These outcomes are particularly true for men and women who live in urban informal settings in South Africa (Ragnarsson et al., 2010). Furthermore, in order to combat these poor health outcomes, especially HIV, many interventions have been employed; however, "the outcomes of HIV behavioural interventions have largely been inadequate and ineffective and the HIV incidence remains unacceptably high" (Ragnarsson et al., 2010, p. 1). According to Peacock, Redpath, Weston, Evans, Daub and Greig (2008), South Africa currently has an estimate of 5.5 million people living with HIV/AIDS.

This reflection brings to light that HIV/AIDs has become a burden of infection, especially as it increases in developing countries (Peacock, et al., 2008). As a result, a lot of research has focused on HIV/AIDS and finding appropriate interventions to reduce HIV/AIDS. However, most of the intervention and prevention efforts used to reduce this outcome of HIV have been used to target the individual person, more specifically, the attitudes of individuals and their knowledge and practices (Ragnarsson et al., 2010). In addition, less attention has been given to policy, socio-cultural and organisational structures which all come to influence the individual and their "efforts to avoid HIV" (Ragnarsson et al., 2010, p. 2). Moreover, much research has argued for new ways in which to undertake the epidemic of HIV and have opted for focusing more on the cultural orientations of people to predict health behaviours (Ragnarsson et al., 2010). When focusing on the cultural orientation of the individual, it raises the importance that is played by structural factors which affects the sexual relationship between individuals, which could ultimately lead to the transmission of HIV/AIDS (Ragnarsson et al., 2010). Structural factors in the light of this research can be viewed as gender, attitudes towards condom use and risky sexual behaviour. Such structural factors within the specific cultural system give way to different explanatory systems in which HIV/AIDS can be understood and will be discussed later in the review under appropriate sections. Furthermore, these structural factors can be associated with certain representations, images or symbols of HIV/AIDS or the transmission of the disease (Ragnarsson et al., 2010). In addition, the importance of looking at sexual behaviour is founded in the spread of HIV/AIDS has been implicated by risky sexual behaviour; hence, prevention literature has aimed to promote and understand sexual behaviours in order to decrease the spread of HIV/AIDS and Sexually Transmitted Diseases (Noar, Cole & Carlyle, 2006).

As it has been mentioned above, one of the structural factors HIV/AIDS is implicated by is gender. Gender will be viewed as a constructed notion specifically how it is constructed within certain cultures and how this construction allows for inequality, violence, sexual abuse and risky sexual practices. The following section will discuss this further.

2.2.2. Gender – An Introduction

One of the key features to be taken into consideration when planning an intervention is the "socio-cultural construction of sexuality within the specific social setting" (Ragnarsson et al., 2010, p. 2). Therefore, the construction of gender can be deemed as important as it is part of the analysis towards the outcome of prevention efforts that aim to reduce HIV/AIDS (Ragnarsson et al., 2010). Furthermore, the socio-cultural construction of gender can be seen as deeply rooted within the expectations of men and women and this influences their opportunities within their society and also their behaviours (Ragnarsson et al., 2010).

In addition, in gender research the focus on men and women are not primarily of concern. Rather, gender research focuses on the construction of manliness or womanliness within unequal categories (Ragnarsson et al., 2010). These unequal categories can be further explored as unequal distribution of power or (and) resources. Moreover, from a gender research perspective "the construction of gender is linked to societal processes involving class, age, sexuality, ethnicity and more" (Ragnarsson et al., 2010, p. 2). Within this view, gender can be seen as a powerful construction that influences the opportunities and behaviours of people in different social contexts such as health systems that have a direct influence upon the individual's well-being and health outcomes (Ragnarsson et al., 2010). Also, for gender to have this type of powerful affect, the notion of gender must be imposed by people, self-defined or even ascribed (Ragnarsson et al., 2010). Furthermore, this construction of gender can be viewed as an influence upon the individual person's sexuality "where gender dynamics play a key role in determining many aspects of a person's risk and response to HIV" (Ragnarsson et al., 2010, p. 2). Gender dynamics here can be viewed as violence between genders such as sexual violence or even how gender is constructed within cultures and the specific roles that culture prescribes to gender that can put people at risk of contracting HIV such as misconceptions about risky sexual behaviours. Hence, it becomes important to understand the construction of gender within the context it finds itself in (Ragnarsson et al., 2010). The following section will discuss gender within the context of HIV.

2.2.3. Gender and HIV/AIDS

Gender has been viewed to be one of the driving forces for the rapid spread of HIV/AIDS in Africa (Peacock et al., 2008). Furthermore, gender gives way to gender violence. For example, in the Sub-Saharan Africa region, gender norms tend to overlook the violent actions that men have towards women. This then results in men having power to dictate the terms of their sexual encounters with women; hence, in this process women become powerless and find it difficult to protect themselves from the violence or getting infected with HIV/AIDS (Peacock et al., 2008). Thus, sexual abuse and violence can be seen as another contributing factor towards the infection of HIV/AIDS as men often participate in risky sexual practices such as not wearing a condom (Peacock et al., 2008). In addition, South Africa has one of the highest rates of violence against women and studies have also concluded that South African youth are "affected by sexual violence" (Peacock et al., 2008, p. 12).

Further research about the increase of HIV/AIDS has found that there is a high occurrence of misconceptions about the risk of HIV/AIDS and sexual violence among men and boys (Peacock et al., 2008). These misconceptions include: in order to show love, one has to engage in sex; forcing someone you know to have sex with you is not sexual violence; "girls have no right to refuse sex with their boyfriends; girls mean yes when they say no; girls like sexually violent guys; girls who are raped asked for it; and girls enjoy being raped" (Peacock et al., 2008, p. 12). Therefore, as violent acts against women increases (especially forced sexual experiences or sexual abuse), so does their vulnerability of contracting HIV increase (Peacock et al., 2008).

Furthermore, research studies in the USA found that those women who contracted HIV, only half of the women reported a forced sexual experience in their teenage years and childhood (Peacock et al., 2008). With this startling amount of violent acts, it was discovered that only a few of these violent acts are actually reported to authorities. According to Peacock et al. (2008), "only one in nine victims report rape and fewer than ten per cent of reported rapes lead to conviction" (p. 11). This message of low conviction rates can lead the perpetrators to think that the chances of them being apprehended will be highly unlikely. In addition, women will now also be less likely to believe that "they can safely leave abusive relationships even if

they suspect their partner is putting them at risk of exposure to HIV/AIDS" (Peacock et al., 2008, p. 11).

From the outcomes of the research described above, interventions have aimed to lower the vulnerability of women being infected by HIV by changing the behaviours and attitudes "related to violence against women and reducing stigma and discrimination in the community" (Peacock et al., 2008, p. 13). However, responses to preventions of behavioural changes have been less positive (Peacock et al., 2008). It must be recognized that there have been efforts to promote gender equality. Some of the interventions were aimed at the community level by mobilizing "men's support for gender equality through work on community norms" (Peacock et al., 2008, p. 13).

From what has been discussed, gender norms, misconceptions and attitudes towards HIV/AIDS and risky sexual behaviours have been a culprit in the infection and spread of HIV. The following section will look at the prevention method of condom use and how this prevention method has not been adequate enough in the fight against HIV in South Africa.

2.2.4. Condom Use

One way in which literature has promoted safer sexual behaviours has been through condom use and the correct and consistent use of condoms (Noar et al., 2006). For this reason much research has been dedicated to "understanding the psychosocial correlates of condom use" (Noar et al., 2006, p. 327). However, the nature of condom use in a traditional cultural practice in South Africa can be proven to be very sensitive. One of the reasons for this is that it is seen as stigmatizing for men, especially when it comes to the construction of masculinity; hence, many men may refuse to use a condom while having sex (Ragnarsson et al., 2010). In addition, previous research has focused on men's attitudes towards condom use and has found that "some men associate male condoms with discomfort, distrust in relationships, undesired interruption of sexual intercourse, and death of female sexual partner" (Peacock et al., 2008, p. 15). More importantly, studies have highlighted "that men with more traditional attitudes towards gender roles and relations are also more likely to have

negative attitudes towards condoms and to use them less consistently" (Peacock et al., 2008, p. 15).

As it was mentioned above, the success of condom use in the decrease of HIV is the correct and consistent usage of condoms. From research it is shown that men's attitudes towards condoms are negative and they tend to use condoms less consistently or not at all which then puts both men and their sexual partner at greater risk of contracting HIV. Furthermore, the attitudes that men have towards women also influences their decisions on whether to use condoms or not (Peacock et al., 2008). Moreover, studies have shown that when women are threatened by violence, it becomes difficult for them to suggest condom use which can also lead to using condoms inconsistently. In addition, times when condoms are being used inconsistently results in the person being "1.6 times more likely to be HIV infected" (Peacock et al., 2008, p. 15). Also, women who have "experienced forced sex were much more likely to use condoms inconsistently than other women" (Peacock et al., 2008, p. 15). Further studies have also shown that some men and women also believe that if their partner refuses to wear a condom that they should not insist on their partner wearing a condom (Peacock et al., 2008). As a result, these actions will lead to higher chances of being infected with HIV/AIDS.

The following section will look at the final structural factor which can lead to an increase of HIV/AIDS. This structural factor focuses on the consumption of alcohol resulting in risky sexual practices which make people more vulnerable to being infected by HIV.

2.2.5. Alcohol and Risky Sexual Practices

As discussed in the introduction, HIV/AIDS is a behavioural factor and can possibly be prevented behaviourally. Furthermore, risky sexual practices are viewed as a person's behaviour and can also put people at risk of contracting HIV/AIDS as well as other STDs (LaBrie & Earleywine, 2000). According to Peacock et al. (2008), "patterns of drinking are embedded in the social, cultural and gender relations of a society" (p. 25). In addition, research has found that sexual behaviour and alcohol consumption often correlate. Therefore, researchers have capitalized on this correlation between risky sexual practices and alcohol as factors that can lead to HIV/AIDS and STDs (LaBrie & Earleywine, 2000). According to

research, excessive consumption of alcohol can result in implications such as psychological problems, antisocial behaviours, educational difficulties and risk taking sexual behaviours (Walsh & Braithwaite, n.d.). Furthermore, studies done in South Africa have shown an association between unprotected casual sex and the consumption of alcohol. This is especially true for casual sex partners (Peacock et al., 2008). In addition, the rise of alcohol consumption is not just a concern in adults but is becoming a trend within the communities of adolescents (Peacock et al., 2008). Also, these studies suggest that adolescents who consume alcohol may be more prone to drinking themselves into a coma, vehicular accidents, violence and risky sexual behaviour (Peacock et al., 2008).

What has become of greater concern is that people who consume a lot of alcohol can become aggressive which leads to assault, victimisation and forced sex. Furthermore, alcohol can also be used to obtain sex in the sense of getting someone intoxicated in order to have sex with them (Walsh & Braithwaite, n.d.). Also, people become more sexually forceful when they have consumed copious amounts of alcohol (Walsh & Braithwaite, n.d.). Moreover, drinking can be gender related as the consumption of alcohol by men may be a way to express masculinity (Peacock et al., 2008).

Consequently, alcohol and risky sexual behaviour have been noticed to have grave outcomes in certain situations; therefore, research has focused its attention on this area. Studies done on alcohol and sexual behaviours at universities in the United States of America have been ongoing. The outcomes of these studies have also aimed at prevention and interventions such as educating the students, making condoms available and so on (Walsh & Braithwaite, n.d.). In addition, this research has also aimed at assessing the risk and targeting interventions (LaBrie & Earleywine, 2000). Despite all of the efforts on expanding education and awareness on the negative outcomes of copious amounts of alcohol and risky sexual behaviours, studies in the USA have shown that "alcohol consumption and risky sexual behaviour [sic] have persisted" (Walsh & Braithwaite, n.d., p. 52).

So far the literature has discussed three types of sensitive behaviours and their risk to possibly lead to contracting HIV/AIDS. In addition, the literature has stressed the epidemic of HIV/AIDS and that it is on the increase in South Africa. It has become vitally important to find a measure in research to evaluate these sensitive behaviours more accurately than it has been evaluated before. Furthermore, this will provide more affective interventions to

implement that can possibly help decrease the spread and rate of HIV. The following section will now come to a conclusion of the literature.

HIV/AIDS has become a disease of concern especially in countries that have high rates of HIV. These countries especially become targets for prevention methods such as HIV services and counselling. In addition, these services are also aimed at preventing mother to child transmission of the virus (Peacock et al., 2008). However, with prevention methods and research into these countries, women are more reluctant to participate in these programs as they live in fear of abuse from their partners if the outcome of their HIV test is positive (Peacock et al., 2008). Moreover, women who have disclosed this type of sensitive information have often experienced a break-up with their partner or violence after the disclosure of this sensitive information (Peacock et al., 2008). Therefore, surveys on risky sexual behaviours that discuss HIV as an outcome to risky sexual behaviours, may result in the participants deliberately misrepresenting their responses (LaBrie & Earleywine, 2000). In addition, research on sensitive behaviours have also found inconsistent findings especially on risky sexual behaviours and alcohol as the evaluation of these behaviours heavily relies on self-reports (LaBrie & Earleywine, 2000).

As this literature has mentioned under the Self-Report Questionnaires section, self-report methods do not come without any flaws (Noar et al., 2006). To recap, the flaws of SRQ methods come from when the participant feels intruded upon, answers in a social desirable manner (that leads to unreliable methods), feel a threat of disclosure, and underreport in questionnaires that do not inspire trust (Einarsen & Våland, 2010; Coutts & Jann, 2008). Therefore, it is of utmost importance to find a measure that can accurately, with more validity and reliability, assess risky sexual behaviours in order for more effective and accurate prevention methods to be put into place and to be improved.

3. The Current Study

As mentioned before, the current study forms part of the supervisor of this thesis' PhD. The supervisor, Mr. Solomon had an interest in finding a suitable and effective method in measuring sensitive behaviour that will yield reliable and valid results. His PhD has involved a couple of Masters and Honours students over the past few years to validate his findings. This thesis is part of one such collaboration between two Honours students, two Masters Thesis by dissertation students and lastly two Masters by coursework students. Each of these students investigated the comparisons of different methods against the backdrop of a specific sensitive behaviour that was chosen from the normative study. More specifically, the two students completing their Honour thesis investigated the Unmatched Count Technique in comparison to Face to Face Interview (FTFI); and, Informal Confidential Voting Interview (ICVI) in comparison to the Unmatched Count Technique 2. In addition, the students completing their Master Thesis by dissertation focused on investigating the comparison between the Self-Report Questionnaire (SRQ), Unmatched Count Technique 1 (UCT 1) and Audio Computer Assisted Self-Interview (ACASI). The second Master Thesis by dissertation student looked at a comparison of four methods, namely, the ACASI, SRQ, UCT 1 and UCT 2. Lastly, the two Masters by Coursework students focused on the comparison between the UCT, ACASI and SRQ methods; and lastly the comparison between the UCT 1, UCT 2 and SRQ was investigated. The latter is the investigation of this thesis.

The current study's investigation of the comparison between the UCT 1, UCT 2 and SRQ needed a behaviour that was operationalised as sensitive to measure the outcome of the base rates of these methods. Therefore, a normative study was carried out prior to the main study in order to operationalise what sensitive behaviour is. As a result, a questionnaire was constructed and handed out to students around the university campus. The questionnaire contained 186 statements that were to be scaled by the participating students. The students were instructed for each statement to cross a box that would indicate how much the student agreed that someone else should not know that behaviour about them. In other words, how embarrassed the student would be if someone else had to find out that they engaged in this type of behaviour. Furthermore, the students were told to think of all the statements to be true to them and then indicate how embarrassing those behaviours would be. For further

discussion on the normative study, please refer to the section ‘5. Methodology: 5.1 Normative Study.’

From the normative study a correlation using Cronbach’s Alpha was conducted to analyse the items operationalised as sensitive by the students. The items relevant for the investigation of this study were taken and formulated into items for the construction of the UCT 1, UCT 2 and SRQ to be completed in the main study. The investigator proceeded with the main study making use of an electronic program MediaLab to capture the response of the participants immediately and have it in a form ready for analysis using XLSTAT 2015. From the analysis, the data indicates which method yielded higher base rates measuring the sensitive behaviours chosen for this study. These sensitive behaviours were namely, Alcohol and Sex; STDs, HIV/AIDS and Risky Sexual Behaviours; and, Condom Use. Lastly, a conclusion will be discussed to indicate which method will be more reliable and valid to use in future research about sensitive behaviours.

The sections to follow will discuss the current study in more detail as well as indicating the aims and rationale behind the study.

4. Aims and Rationale

In the formation of this research thesis four aims were produced to be addressed and researched by the end of this study. These aims are namely the following:

1. To norm the ranges of sensitive and innocuous items for this study through scaling a normative study of the student population at the university at which the research took place.
2. To compare the UCT 1 against the UCT 2 method to determine which method was more effective in measuring sensitive items.
3. To compare the UCT 1, UCT 2 and SRQ with a null hypothesis that no base rate difference will exist between the three measures.
4. To contribute to evidence to support recommendations for methodology for surveying sensitive behaviour that will have implications for intervention, monitoring and evaluations of designs.

In addition to the aims mentioned above, this study also will be addressing the following questions:

1. Does the UCT method result in higher base rates than the standard self-report survey methods?
2. Is the UCT 2 method a potentially better and more effective method to use than the UCT 1 method?
3. Could the UCT 2 method possibly be a better method to use in future investigations into sensitive research?

Measurements such as risk assessments play an integral part in behavioural research. One such example can be risk assessments for HIV. Furthermore, if errors occur using these risk assessments, bias estimates can occur leading to high risk behaviours being misinterpreted and even underreported (Boekeloo, Schiavo, Rabin, Conlon, Jordan, & Mundt, 1994). Furthermore, grave consequences can result if such an error is to be made in clinical research. To name just a few, the patient could be placed at risk of being mislabeled in a low-risk group and missing opportunities for HIV detection and risk preventative measures such as

counselling (Boekeloo et al., 1994). In addition, if such an error occurred and the patient decided to donate blood, blood donations will be contaminated.

Therefore, to create more valid and reliable measurements have been problematic in the investigation of sensitive research and to also lower the chance of any errors that could carry grave consequences such as contaminated donator bloods, mislabeled HIV patient as non-HIV patients, to be minimized or eliminated.

Today, society and the political realm can contribute and be in part responsible to the development of sensitive issues. Therefore, there is a need for researchers to investigate the field of sensitive research to gain a greater understanding of contributing issues to greater problems which are faced today such as HIV/AIDS, domestic violence, rape and alcoholism to name a few (Dickson-Swift et al., 2008).

Furthermore, sensitive topics can be operationalised as taboo behaviour or behaviour that is seen as undesirable by a community (Dickson-Swift et al., 2008; Droitcour et al., 1991). Therefore, in most cases participants in such research will prompt to underreport or report by giving socially desirable answers so as to avoid being stigmatised by their community for engaging in behaviour that is considered to be socially undesirable. Also, these participants may seek to avoid trait desirability (behaviours or traits which are seen as undesirable to a community) by the need for approval by their community and so answering questions in a socially desirable way (Droitcour et al., 1991). To combat the result of social desirable answers and underreporting, there is a dire need to develop techniques that can reduce these negative outcomes to sensitive research.

Research investigating sensitive behaviour depend upon truthful and honest answers from the population of study to adequately make inference about those behaviours and to implement programs to reduce the consequences of potential negative outcomes such as the spread of HIV, alcoholism, STDs and violence to name a few (Dickson-Swift et al., 2008; Einarsen & Våland, 2010; Kays, et al., 2012; Peacock et al., 2008; Walsh & Braithwaite, n.d.).

5. Methodology

5.1. Norming Study

Before the proposed study was conducted, a norming pilot study was done by sampling students from the University of KwaZulu-Natal Pietermaritzburg campus to analyse what items will be the best to include in the proposed study. The aim of norming the items that are included in the main study were to increase the validity and reliability of the main study by norming a list of behaviours perceived to be sensitive by the participants. As mentioned above, the sensitive behaviour had to be viewed by the participants to carry a substantial amount of threat when partaking in it (Dickson-Swift et al., 2008). The participants had to rank the sensitivity of the behaviour in accordance to how embarrassed they would feel if someone found out this behaviour was true to the participant. This gives indication that the behaviour has implications and complications for the participant (Dickson-Swift et al., 2008).

This norming pilot study made use of a SRQ to scale the levels of sensitivity for innocuous and sensitive items concerned to the population of interest (See Appendix One). These sensitive questions from the norming study was used to generate questionnaires for the UCT 1, UCT 2 and SRQ in this study. Furthermore, this study went about answering the main questions by randomly assigning participants to either complete the UCT 1, UCT 2 or a Self-Report Questionnaire (SRQ) and then compared the results to see which method resulted in higher base rates. All three of these methods contained the same questions. Another two components that were included in this study were a post survey questionnaire on the participants' experience and a social desirability bias measurement. This 5-item scale analysed whether participants treated as groups were responding in a socially desirable manner. Furthermore, the participants were divided into high and low social desirability groups based on Hays' scale (Appendix Three). Hays' scale presents the participants with five items and five responses, namely: 'Definitely True', 'Mostly True', 'Don't Know', 'Mostly False', and 'Definitely False'. When implementing the scale, only the two most extreme responses ('Definitely True' and 'Definitely False') was analysed to see if participants responded in a social desirable manner (Ray, 1984).

5.2. Research Design

This research design used a quantitative research strategy and more specifically an experimental cross sectional survey design. Experimental designs usually aim at answering cause-and-effect questions "about the relationship between two variables" (Gravetter & Forzano, 2009, p. 152). As seen in this study, the cause-and-effect relationship is highlighted in the way participants answer scales and whether they answer in a truthful manner or dishonest manner will determine the reliability and validity of the scale. Furthermore, the reliability and validity of the scale outcomes in any other research will be drawn on to make inferences about what is being researched and this will impact the outcomes of any research or even clinical trials. Therefore, it is crucial for the main study to look at the outcome of these three methods and to scrutinise the methods in order to separate the methods and to find the method that will be more reliable and valid to use in sensitive research for future use. This main study also proposes that the outcomes to other types of research such as clinical research can benefit from a more reliable and valid method.

5.3. Sampling and Data Collection

As explained above, before the main study could have been done, a normative study was done in order to identify items that are operationalised as sensitive within the student population at the University of KwaZulu-Natal, Pietermaritzburg campus. The normative study was done as part of five other research students' research for either their Master's Thesis or Honours Project. Furthermore, a data sharing arrangement was agreed upon as it was relevant to the item selection for the experimental study comparisons. The normative study was mainly carried out on university students who had lectures to attend in a lecture hall located next to the psychology department at UKZN, Pietermaritzburg campus. The researchers kindly asked the lecturers (mainly psychology lecturers) to allocate a few minutes at the end of their lecture for the students to complete the normative study survey. Also, students who were waiting for their next lecture outside the building were asked to participate in the normative study. The sample for the normative study consisted of a minimum of 50 participants. The total number of participants that took part in the normative study were 306 students. Most of the students fell between the ages of 18-23 and the majority of the students

who participated were females. In addition, most of the participants fell in their first or third year of studies. The results section presents descriptive statistics for the normative study.

Similarly, for the main study (the experimental study) there was an aim to have a minimum of 250 participants for each of the groups the participants were assigned to. For example, 100 participants for the UCT 1; 100 participants for the UCT 2 and 50 participants for the SRQ (LaBrie & Earleywine, 2000; Dalton et al., 1994). The total number of participants in the experimental study were 523. Out of the 523 participants, 105 completed the SRQ, 104 completed the UCT 1 (Forms A and B); 111 completed UCT 1 (forms C and D); 103 completed UCT 2 (forms A and B); and lastly, 100 completed UCT 2 (forms C and D). For all of the methods being tested, majority of the students were between the ages of 18-23, identified their race as black and were females. Furthermore, most of the students were in their first year of studying. A table of these descriptive statistics can be found in the results section of this thesis. The participants were recruited around the Pietermaritzburg campus and were asked to meet the researchers at certain times by the Psychology Department building. There the participants were directed to the Psychology computer laboratory to be randomly assigned to a method. Participants assigned to the SRQ, UCT 1 and 2 and the ACASI completed these methods on the computers in the Psychology Computer Laboratory. Participants assigned to the interview conditions were taken to a private office in the Psychology Department and interviewed there.

Also, each researcher part of the bigger study rotated in terms of who administered the UCT methods, SRQ and ACASI and also who did the interviews. For the methods in the computer laboratory (SRQ, UCT 1 and 2 and ACASI), two to three researchers were always to be on duty and helped administered these tests. For the Face To Face Interview (FTFI) and Informal Confidential Voting Interview (ICVI), only two researchers administered these interviews. In other words, one researcher administered the FTFI and a different researcher administered the ICVI. The researchers were trained by the supervisor (Mr. Vernon Solomon) on how to administer the interview processes for both of the FTFI and ICVI.

In addition, all of the participants were asked to sign consent forms (Appendix Seven); and this research was approved through the appropriate ethical review process by SSHREC (Social Science and Humanities Research Ethics Committee) and complies with the University's 'Code of Conduct for Research' (Appendix Ten and Appendix Eleven).

Participants were also given an incentive of R20 to compensate for their time used in participating in the experimental study. Furthermore, the requirement for permission from anyone other than the participant to participate within this thesis was not needed as all of the students who participated in this study were over the age of 18 and fully understood the requirements of the thesis and the data collection procedures. Permission to conduct research on the Pietermaritzburg campus was obtained from the Dean and Head of School for Applied Human Sciences (Appendix Eleven).

For sampling, this study made use of convenient sampling by sampling university students around campus. However, the students who were sampled were randomly assigned to the UCT 1 or UCT 2 or SRQ methods. These participants were randomly assigned by a random number generator from www.randomizer.org. In addition, the participants were also randomised across the different domains of sensitive behaviour. This sampling method enabled no bias to take place from the researcher as the participants were randomly assigned to all of these different domains and methods. This also determined that each participant had an equal and fair chance of being assigned to either conditions stated above (Gravetter & Forzano, 2009). Lastly, the data was collected from May 2013 until and including June 2013.

5.4. Measurements and Procedures

The data was collected by random assignment of the participants to the UCT 1, UCT 2 or SRQ method groups. According to Labrie and Earleywine (2000), for the UCT 1 method participants were assigned into two independent groups where the one group received a series of non-sensitive items that were all innocuous. For this group the participants had to report back how many of the items were applicable to them (Chaudhuri & Christofides, 2007). For the second group, the same innocuous items appeared as was in group one; however, one additional statement that was sensitive in nature (as this study concluded through the normative study) was added (Dalton et al., 1994). As with the first group, the participants of group two were asked to report on how many of the items were applicable to them. Furthermore, the results of these two groups were used to estimate a base rate for the sensitive behaviour (Dalton et al., 1994) (Appendix Four). In contrast, the UCT 2 worked slightly differently from the UCT 1. According to Chaudhuri and Christofides (2007), there

needs to be an increased sense that the items in the lists serve a meaningful purpose and this will also increase "the level of cooperation of the participants" (p. 592). Therefore, these items need to "blend together and give the impression that the number reported to the interviewer is a meaningful piece of information" (Chaudhuri & Christofides, 2007 p. 592). In summary, group one for the UCT 2 was constructed in the same manner as group one for the UCT 1. However, Chaudhuri and Christofides (2007) suggest that the innocuous items for group two should not be unrelated to the sensitive item but should rather be similar or related to the sensitive item and this is how group two for the UCT 2 was constructed (Appendix Four). Furthermore, the third way data was collected was by using a SRQ method where the participants filled in a questionnaire in a true or false format and indicated whether the items were true or false to them (See Appendix Five and Nine).

5.4.1. MediaLab

MediaLab and current study:

Participants recruited for the experimental study were referred to the psychology department, computer laboratory. Here each participant was randomly assigned a computer. Each computer had a different method (SRQ, UCT 1, UCT 2 or ACASI) on it measuring the sensitive behaviours assembled from the normative study. The participants completed the forms or surveys on each computer respectively. Thus, data for the experimental study purposes were captured electronically and imported straight into the statistical program for further analysis. For this thesis the data was imported into excel and used in XLSTAT 2015 for further analysis. Furthermore, MediaLab was a practical program to use for the amount of participants that were recruited (523 participants for this study; and about 1000 for the broader study that used MediaLab). MediaLab enabled this study to also save some time in entering data and minimized human data entry errors. With this in mind, MediaLab can be viewed as a more reliable and valid way of capturing data.

5.5. Ethical Considerations

In the past there have been many instances of researchers committing ethical atrocities such as the Zimbardo's study imitating tensions between warders and prisoners through student participation; Milgram's obedience study; the Tuskegee syphilis study; and, atrocities committed by the Nazi researchers during World War II (Wassenaar, 1999). These incidents lead to actions to increase the ethical considerations in research, some of these being the Nuremberg Code in 1948 (emphasising participant informed consent in order to prevent scientists abusing participants in the name of research) and the Declaration of Helsinki in 1964 (to direct research with ethical principles that are both of benefit for participants and the research) (Wassenaar, 1999; Zion, Gillam, & Loff, 2000). In a broad view the purpose of research ethics is to protect participants and to prevent plagiarism and scientific misconduct (Wassenaar, 1999).

The following section will discuss some philosophical principles in guiding ethical research; namely, autonomy and respect for persons, nonmaleficence, beneficence and justice (Wassenaar, 1999). Firstly, respect for persons and autonomy requires the participant to voluntarily give consent to the research study. The participant should not in any way be coerced or forced into a research study. Participants who voluntarily give consent to the research study should also be protected by keeping information and identities of participants or communities confidential (Wassenaar, 1999). Secondly, nonmaleficence insures that no harm occurs to the participants of a research study either directly or indirectly as a consequence of the study. Furthermore, participants may not physically be harmed by the study but they may be wronged possibly through deception. Careful consideration needs to be taken between wrongs and harms which should be avoided (Wassenaar, 1999). Thirdly, beneficence requires the researcher to maximise the benefits that the study can give the participants. In other words, the researcher needs to consider the risk/benefit ratio of the study and should have the benefits outweigh the risks of the study. Paying participants to partake in research should not be considered as a benefit under this topic. Benefits should be more direct "such as better access to health facilities, better skills, better knowledge of the topic in question and so on" (Wassenaar, 1999, p. 67). Lastly, justice requires participants to be treated with equity and fairness throughout the research process, for example, the fair selection of research participants serves as justice and giving care to participants who become

harmed or distressed by the study. In addition, those who bear the burden of the research should also benefit from the research and vice versa. For example "interventions should not be experimentally applied to populations who in future would be unable to benefit from such interventions if the study were to find the intervention effective" (Wassenaar, 1999, p. 68).

In addition to what has been discussed above, it is important to look at some of these issues more in depth. Institutional approval should be obtained when required before the research study can proceed. The researchers must provide a protocol with accurate information in and once this protocol is approved, the researchers need to conduct their research in accordance with this protocol (American Psychological Association, 2010). Maintaining confidentiality should be one of the researcher's primary obligations. It is important to protect participants involved in research studies by protecting and de-identifying confidential information (American Psychological Association, 2010). Confidentiality should also be maintained in the disposing, transferring, storing, accessing and creating of records (American Psychological Association, 2010). In line with protecting participants, it is very necessary that the participants give informed consent to participate in the study. In order to obtain informed consent, it is important that the researcher informs the participant about the following:

1) The purpose of the research, expected duration and procedures
2) Their rights to decline to participate and withdraw from the research once participation has begun
3) The foreseeable consequences of declining or withdrawing
4) Reasonably foreseeable factors that may be expected to influence their willingness to participate such as potential risks, discomfort, or adverse effects
5) Any prospective research benefits
6) Limits of confidentiality
7) Incentives for participation
8) Whom to contact for questions about the research and research participants' rights

(American Psychological Association, 2010, p. 10)

Before the study commences, participants should be well briefed by providing them with the nature of the research study. If any misconceptions should occur, the researchers should take

reasonable steps to correct these misconceptions (American Psychological Association, 2010).

As mentioned earlier on, the ethics of a study does not only apply to the protection of participants but ethics also applies to prevent scientific misconduct (Wassenaar, 1999). One area in which scientific misconduct could possibly happen is in the reporting of results. Researchers should not at all fabricate their findings or data. If the researcher does discover a significant error in their data, they must follow the correct steps in correcting this error (American Psychological Association, 2010). Furthermore, researchers must not plagiarise someone else's work and pose it as their own. This is a criminal offence and the researcher can be heavily penalised. Thus, it is important that the researcher uses the correct referencing system (American Psychological Association, 2010).

5.5.1. Ethical considerations for this thesis

Each participant for this study was approached by a researcher with an informed consent form (Appendix Seven). Before the study could commence the participants were informed about the purpose of the study, the procedures, duration and that the participation was completely voluntary. Participants were also told that they would receive an incentive of R20 to compensate them for their time completing the experimental study. The research team also informed the participants that they can withdraw from the study without fear of penalties. The nature of the study exposed participants to sensitive questions and posed a risk that some participants may have become distressed in answering the sensitive questions. Therefore, the participants were told if they became distressed during the study they can also withdraw from the study without fear of penalties. They could also approach the researchers from the broader study (listed below) or the supervisor (Mr. Vernon Solomon – Solomon@ukzn.ac.za) if they needed to be counselled and would have been referred to the counselling service of their College or the Psychology School's Child and Family Care Centre (Appendix Eight).

To minimize any harm, the participants were ensured of confidentiality and anonymity (as no identifiable information was recorded) and that they were able to freely withdraw from the study without fear of penalty. The participants were also informed that the researchers had no

way of knowing individual data as the tests do not measure individual data. Furthermore in protecting the participants, the topic of HIV was discussed and the participants were informed that there is no possible way of knowing whether they were HIV positive. According to HEAIDS (2010), there is a prevalence rate of 6.4% of students that will have HIV in KwaZulu-Natal; therefore, this study could have encountered participants who are HIV positive. However, the study emphasised that it will not solely focus on HIV positive participants.

There was no direct benefit for the participants in the study; however, from the data gained through participation it might allow for future research to use a more effective method in measuring sensitive behaviour. In doing so, more reliable and valid data will be collected by researchers allowing for more effective interventions to be put in place and ideally to minimize the transmission of HIV/AIDS. Lastly, the research team made sure that each participant in the study was treated with fairness and equity throughout the research process.

In adhering to standard ethical conditions for research involving human participants, each researcher involved in the broader study wrote a protocol for their own area of interest that was submitted to an ethics committee and to the institution where the study would take place (University of KwaZulu-Natal, Pietermaritzburg Campus). The study obtained both institutional approval and ethics approval (Appendix Ten and Eleven). The research was carried out only after approval was given and therefore was done in accordance with the protocol. In addition, each researcher submitted a Turnitin report to prove that the thesis being submitted has not been plagiarised and prevent scientific misconduct. All the researchers partaking in the broader study had to produce their theses in accordance with the rules and regulations of the American Psychological Association style of referencing (American Psychological Association, 2010).

5.6. Validity and Reliability of the Experimental Study

Reliability for this study was achieved by assuring that there was consistency in participants' responses. Reliability in the normative study was established by using Cronbach's alpha. In theory, if the participants responded in a consistent manner to all of the items in the scale,

Cronbach's alpha will be high and this also indicates that the internal consistency of the study is high (Etchegaray & Fischer, 2010). However, if there is some form of discrepancy in the items, Cronbach's alpha will be low and this will result in negatively impacting the internal consistency of the construct (Etchegaray & Fischer, 2010). The outcome of Cronbach's alpha found that there was internal consistency amongst the items. Furthermore, to achieve validity this study looked at whether the items measure what we want them to measure (Etchegaray & Fischer, 2010). To increase the validity, the participants of this study were given an informed consent and information sheet which contained all of the details of this study and the intention of this research. Maximum anonymity and confidentiality needs to be ensured because of the sensitive nature of this project; therefore, no other identifiable information other than the demographic information given was obtained from the participants. Furthermore, more protection was provided for the participants through completing an informed consent form which was reviewed by the SSHREC committee. However, if the participants felt distressed and uncomfortable during the study, they had a choice to freely withdraw from the study without the fear of any penalties as the study was completely voluntary. If distress was the case, participants were also referred to the counselling service of their College or to the Psychology School's Child and Family Care Centre (See attached Appendix Eight).

Reviewing the validity of the study, face validity was also considered to show whether the study appears to measure what it wants to measure by looking at the items (Etchegaray & Fischer, 2010). This was clearly the case as the items all look at the nature of sensitivity of each comparison and comparing the baseline rates to see which measure outcome is more reliable and effective. In addition, in the construction of the initial items content validity was proven by the design of the normative study to assess whether the items this study is interested in was of relevance "to the domain of measurement of interest" and these items were founded to be of interest according to the outcomes of the normative study and the proceeding of the main (Etchegaray & Fischer, 2010. p. 134). As this study has mentioned numerous of times, the normative study has become one of the valuable ways in which to increase the reliability and validity of the main study. In addition, the normative study has allowed for the inclusion and exclusion of items that were of importance (items that were operationalised to be sensitive by the students) or not to be of importance (items operationalised by the students as non-sensitive). Items that were operationalised as sensitive were included in the main study and items operationalised as non-sensitive were discarded

from the main study. The normative study should effectively help to achieve consistency in the proposed study items and also measure what the study is supposed to measure (Etchegaray & Fischer, 2010). In addition, the questionnaires used in this study are generated from previous literature and studies allowing for more validity in the design of the instruments. Consequently, the rates of disclosure for the methods are an analogue of validity. Furthermore, the large sample this study drew on increased the reliability, validity and rigour of this study. Also, the randomisation of the methods contributes to the rigour of this study.

6. Data Analysis

6.1. Norming Study

In the formation of the norming study, questionnaires were given to 306 university students to determine what was to be operationalised as sensitive questions. The data from the questionnaires were coded and entered into IBM SPSS 21. A factor analysis was run for all 186 items. Principle Component and factor analysis were used to minimize the large set of items into smaller components. This resulted in 71 items, of which 20 were considered to be the most sensitive, 25 non-related non sensitive and 26 related non-sensitive (Appendix Nine). These items are specifically crucial to the UCT 1 and UCT 2 methods as the UCT 1 required non-related non-sensitive questions and the UCT 2 required related but non-sensitive items. Both the UCT methods required the group of sensitive items. This research thesis only focused on sensitive items of unsafe sexual practices in relation to sexual intercourse and alcohol drinking; STDs, HIV and risky sexual behaviour; and condom use.

Below is the list of sensitive items used in this study.

Table 1 of Sensitive Items for SRQ and UCT 1

Comparison Method	**Sensitive Topic**	**Sensitive Items (questions)**
SRQ vs. UCT 1	Alcohol and Sexual Intercourse	
		Response 27: I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted.
		Response 41: I have had sexual intercourse when so under the influence of alcohol that I was unable to consent.
		Response 52: I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.

SRQ vs. UCT 1	STD's, HIV and Risky Sexual Behaviour	
		Response 24: I have been treated for sexually transmitted infections (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).
SRQ vs. UCT 1	Condom Use	
		Response 48: I have refused to use a condom.

Table 2 of Sensitive Items for SRQ and UCT 2

Comparison Method	**Sensitive Topic**	**Sensitive Items (questions)**
SRQ vs. UCT 2	Alcohol and Sexual Intercourse	
		Response 27: I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted.
		Response 41: I have had sexual intercourse when so under the influence of alcohol that I was unable to consent.
		Response 42: I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol.
		Response 52: I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.

SRQ vs. UCT 2	STD's, HIV and Risky Sexual Behaviour	
		Response 5: I am HIV positive.
		Response 24: I have been treated for sexually transmitted infections (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).
SRQ vs. UCT 2	Condom Use	
		Response 48: I have refused to use a condom.

Table 3 of Sensitive Items for UCT 1 and UCT 2

Comparison Method	**Sensitive Topic**	**Sensitive Items (questions)**
UCT 1 vs. UCT 2	Alcohol and Sexual Intercourse	
		Response 27: I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted.
		Response 41: I have had sexual intercourse when so under the influence of alcohol that I was unable to consent.
		Response 52: I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.
UCT 1 vs. UCT 2	STD's, HIV and Risky Sexual Behaviour	
		Response 24: I have been treated for sexually transmitted

		infections (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop).
UCT 1 vs. UCT 2	Condom Use	
		Response 48: I have refused to use a condom.

6.2. Experimental Study

As mentioned before, this thesis is part of a broader study and as a result the questions designed in the instruments were designed to cover all of the various topics being studied in the broader study by the different researchers. Hence, this thesis only looked at the questions designed to be relevant to this study.

The first step in analysing the data was to look at the findings from the responses of the participants on MediaLab. The first set of responses that were looked at was for the SRQ. For the SRQ responses, the proportion of participants who answered 'Yes' to questions and 'No' to questions were calculated respectively in these groups. This was done by calculating the frequency of the response 'Yes' and dividing it with the total number of participants who responded to that specific topic (Tredoux & Durrheim, 2002). The same was done with the frequency of the response 'No'. After these proportions were calculated, a mean response of 'Yes' for the specific topic under analysis (for example: Alcohol and Sex) were calculated. The same was repeated for the proportion of the 'No' responses. Therefore, each topic: Alcohol and Sex; STD's, HIV and Risky Sexual Behaviour; and Condom Use, had an overall mean of the proportions of the 'Yes' and 'No' responses. These overall calculations were then used in XLSTAT in comparison against the UCT 1 and UCT 2 to compare which proportion resulted in the higher base rate.

The second step was to calculate the base rates of both of the UCT methods. These calculations were also done with respect to the particular topics of interest. For both of the UCT's there were a certain number of datasets which could be found within each of the three topics mentioned above. Each dataset had a Sensitive form and a Non-Sensitive form as indicated in the table below for the UCT 1:

Table to show the UCT 1 set-up

Form 1 (Non-Sensitive)	Form 2 (Sensitive)
Innocuous unrelated item	Innocuous unrelated item
Innocuous unrelated item	Innocuous unrelated item
Innocuous unrelated item	Innocuous unrelated item
	Sensitive item

The means for each form in that particular dataset were then calculated. The mean from the non-sensitive form was subtracted from the mean of the sensitive form to calculate the base rate of that specific dataset (Dalton et al., 1994; Chaudhuri & Christofides, 2007). All the base rates for the specific topic were then used to calculate the average number of participants agreeing to the sensitive behaviour.

The same procedure was followed for the UCT 2. The only difference was that the forms of each dataset for the UCT 2 looked slightly different from the forms of the UCT 1 as seen in the picture below:

Table to show the UCT 2 set-up

Form 1	Form 2
Innocuous unrelated item	Related item
Innocuous unrelated item	Related item
	Sensitive Item
Innocuous unrelated item	Related Item
Innocuous unrelated item	Related item

Form 1 above is presented as the Non-Sensitive form and Form 2 as the Sensitive form.

Compared to the UCT 1 Sensitive form, the UCT 2 Sensitive form was constructed in a way to make all the items related to the sensitive item being measured instead of making all the items innocuous and unrelated to the sensitive item as in the UCT 1 (Chaudhuri & Christofides, 2007).

In addition, each of the overall means for the specific topics were placed into XLSTAT 2015 to compare the means of the proportions and to calculate the power. The statistical power of

the test indicates the probability of correctly rejecting the false null hypothesis. Setup in the next section, are the results from XLSTAT 2015 with the hypothesis for each of the different topics respectively.

7. Results

7.1. Descriptive Statistics for the Norming Study:

Table 1. To show the frequency Age of the Norming Study Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	12	3.9	3.9	3.9
	18	23	7.5	7.5	11.4
	19	72	23.5	23.5	35.0
	20	60	19.6	19.6	54.6
	21	56	18.3	18.3	72.9
	22	31	10.1	10.1	83.0
	23	26	8.5	8.5	91.5
	24	9	2.9	2.9	94.4
	25	3	1.0	1.0	95.4
	26	2	.7	.7	96.1
	27	1	.3	.3	96.4
	28	2	.7	.7	97.1
	29	3	1.0	1.0	98.0
	32	1	.3	.3	98.4
	33	1	.3	.3	98.7
	35	1	.3	.3	99.0
	43	1	.3	.3	99.3
	45	1	.3	.3	99.7
	49	1	.3	.3	100.0
	Total	306	100.0	100.0	

Table 2. To show Gender of the Norming Study Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	9	2.9	2.9	2.9
	Male	108	35.3	35.3	38.2
	Female	189	61.8	61.8	100.0
	Total	306	100.0	100.0	

Table 3. To show Year of Study for the Norming Study Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	9	2.9	2.9	2.9
	1	98	32.0	32.0	35.0
	2	72	23.5	23.5	58.5
	3	90	29.4	29.4	87.9
	4	37	12.1	12.1	100.0
	Total	306	100.0	100.0	

Table 4. To show Race of Norming Study Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	8	2.6	2.6	2.6
	Black	193	63.1	63.1	65.7
	Coloured	21	6.9	6.9	72.5
	Indian	62	20.3	20.3	92.8
	White	21	6.9	6.9	99.7
	Other	1	.3	.3	100.0
	Total	306	100.0	100.0	

7.2. Descriptive Statistics for the Experimental Study

Table 1. To show Descriptive Statistics of the Experimental Study

		SRQ	UCT Type 1 A	UCT Type 1 B	UCT Type 1 C	UCT Type 1 D	UCT Type 2 A	UCT Type 2 B	UCT Type 2 C	UCT Type 2 D
Age	**18-20**	61	28	28	40	30	30	29	26	28
	21-23	40	23	23	15	21	18	20	21	19
	24-26	2	1	1	3	1	1	2	3	3
	27+	2	0	0	1	0	1	2	0	0
Gender	**Male**	43	20	18	15	13	15	12	11	14
	Female	62	32	34	44	39	35	41	39	36
Year of Study	**1st**	62	24	25	28	24	25	22	21	22
	2nd	18	15	11	14	10	13	13	16	13
	3rd	10	7	9	9	11	6	12	9	9
	4th	15	6	7	8	7	6	6	4	6
Race	**Black**	89	48	46	53	46	46	48	48	45
	White	10	0	3	4	3	2	1	1	1
	Coloured	4	1	2	2	3	0	3	1	2
	Indian	2	2	1	0	0	2	0	0	2
	Other	0	1	0	0	0	0	1	0	0
Total	**Number of Participants**	**105**	**52**	**52**	**59**	**52**	**50**	**53**	**50**	**50**

7.3. Frequency Statistics for the Experimental Study Sensitive Questions

Table 1. To show percentage of participants agreeing to the sensitive behaviour: SRQ vs. UCT 1

Alcohol and Sex: SRQ vs UCT 1				
Responses for Alcohol and Sexual Sensitive Behaviours	**SRQ Mean 'Yes' response**	**Percentage of Participants answered 'Yes' to SRQ Sensitive Question**	**UCT 1 Estimated Mean**	**Base Rate Percentage Estimation of Participants engaging in Sensitive Behaviour**
Response 27: I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted	0.4286	43%	-0,5192	52%
Response 41: I have had sexual intercourse when so under the influence of alcohol that I was unable to consent	0.1143	11%	-0,5474	55%
Response 52: I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them	0.1905	19%	0,9352	94%
STD's, HIV and Risky Sexual Behaviours				
Responses for STD's, HIV and Risky Sexual Behaviours	**SRQ Mean 'Yes' response**	**Percentage of Participants answered 'Yes' to SRQ Sensitive Question**	**UCT 1 Estimated Mean**	**Base Rate Percentage Estimation of Participants engaging in Sensitive Behaviour**
Response 24: I have been treated for sexually transmitted infections (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)	0.1905	19%	0,8077	81%
Condom Use				

Responses for Condom Use	SRQ Mean 'Yes' response	Percentage of Participants answered 'Yes' to SRQ Sensitive Question	UCT 1 Estimated Mean	Base Rate Percentage Estimation of Participants engaging in Sensitive Behaviour
Response 48: I have refused to use a condom	0.1143	11%	0,3438	34%

Table 2. To show percentage of participants agreeing to the sensitive behaviour: SRQ vs. UCT 2

Alcohol and Sex: SRQ vs UCT 2				
Responses for Alcohol and Sexual Sensitive Behaviours	**SRQ Mean 'Yes' response**	**Percentage of Participants answered 'Yes' to SRQ Sensitive Question**	**UCT 2 Estimated Mean**	**Base Rate Percentage Estimation of Participants engaging in Sensitive Behaviour**
Response 27: I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted	0.4286	43%	1,0683	106%
Response 41: I have had sexual intercourse when so under the influence of alcohol that I was unable to consent	0.1143	11%	-0,1	10%
Response 42: I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol	0.2286	23%	0,2532	25%
Response 52: I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them	0.1905	19%	0,1377	14%
STD's, HIV and Risky Sexual Behaviours				

Responses for STD's, HIV and Risky Sexual Behaviours	SRQ Mean 'Yes' response	Percentage of Participants answered 'Yes' to SRQ Sensitive Question	UCT 2 Estimated Mean	Base Rate Percentage Estimation of Participants engaging in Sensitive Behaviour
Response 5: I am HIV positive	0.0381	4%	-0,12	12%
Response 24: I have been treated for sexually transmitted infections (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)	0.1905	19%	0,26	26%
Condom Use				
Responses for Condom Use	**SRQ Mean 'Yes' response**	**Percentage of Participants answered 'Yes' to SRQ Sensitive Question**	**UCT 2 Estimated Mean**	**Base Rate Percentage Estimation of Participants engaging in Sensitive Behaviour**
Response 48: I have refused to use a condom	0.1143	11%	0,34	34%

Table 3. To show percentage of participants agreeing to the sensitive behaviour: UCT 1 vs. UCT 2

Alcohol and Sex: UCT 1 vs UCT 2				
Responses for Alcohol and Sexual Sensitive Behaviours	**UCT 1 Estimated Mean**	**Percentage of Participants answered 'Yes' to SRQ Sensitive Question**	**UCT 2 Estimated Mean**	**Base Rate Percentage Estimation of Participants engaging in Sensitive Behaviour**
Response 27: I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted	-0,5192	52%	1,0683	107%
Response 41: I have had sexual intercourse when so under the influence of alcohol that I was unable to consent	-0,5474	55%	-0,1	10%

Response 52: I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them	0,9352	94%	0,1377	14%
STD's, HIV and Risky Sexual Behaviours				
Responses for STD's, HIV and Risky Sexual Behaviours	**UCT 1 Estimated Mean**	**Percentage of Participants answered 'Yes' to SRQ Sensitive Question**	**UCT 2 Estimated Mean**	**Base Rate Percentage Estimation of Participants engaging in Sensitive Behaviour**
Response 24: I have been treated for sexually transmitted infections (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)	0,8077	81%	0,26	26%
Condom Use				
Responses for Condom Use	**UCT 1 Estimated Mean**	**Percentage of Participants answered 'Yes' to SRQ Sensitive Question**	**UCT 2 Estimated Mean**	**Base Rate Percentage Estimation of Participants engaging in Sensitive Behaviour**
Response 48: I have refused to use a condom	0,3438	34%	0,34	34%

Results of Experimental Study

1. **SRQ vs. UCT 1**

The first sets of comparisons were done between the SRQ and UCT 1 measuring the sensitive questions about Alcohol and Sex; STD's, HIV and Risky Sexual Behaviours; and, Condom Use.

A. <u>Alcohol and Risky Behaviour</u>

Hypothesis A.1: The Null Hypothesis

Ho: There is no significant difference between the SRQ (proportion 1) and UCT 1 (proportion 2) in measuring the sensitive question (Response 27) *I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted.*

Hypothesis A.2: The Alternate Hypothesis

Ha: There is a significant difference between the SRQ (proportion 1) and the UCT 1 (proportion 2) in measuring the sensitive question (Response 27) *I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted.*

Table 1

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

SRQ Proportion 1: 0,4286	
SRQ Sample size 1: 105	
UCT 1 Proportion 2: 0,5192	
UCT 1 Sample size 2: 104	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.225 ; 0.044 [
Difference	-0.091
z (Observed value)	-1.248
z (Critical value)	1.960
p-value (Two-tailed)	0.212
alpha	0.05

Note. Test interpretation:
H0: The difference between the proportions is equal to 0.
Ha: The difference between the proportions is different from 0.
As the computed p-value is greater than the significance level alpha=0, 05, one cannot reject the null hypothesis H0.
The risk to reject the null hypothesis H0 while it is true is 21,21%.

Hypothesis A.3: The Null Hypothesis

Ho: There is no significant difference between the SRQ (proportion 1) and UCT 1 (proportion 2) in measuring the sensitive question (Response 41*) I have had sexual intercourse when so under the influence of alcohol that I was unable to consent.*

Hypothesis A.4: The Alternate Hypothesis

Ha: There is a significant difference between the SRQ (proportion 1) and the UCT 1 (proportion 2) in measuring the sensitive question (Response 41) *I had sexual intercourse when so under the influence of alcohol that I was unable to consent*.

Table 2

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

SRQ Proportion 1: 0,1143	
SRQ Sample size 1: 105	
UCT 1 Proportion 2: 0,5474	
UCT 1 Sample size 2: 111	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.544 ; -0.322 [
Difference	-0.433
z (Observed value)	-7.577
z (Critical value)	1.960
p-value (Two-tailed)	< 0,0001
alpha	0.05

Note. Test interpretation:
H0: The difference between the proportions is equal to 0.
Ha: The difference between the proportions is different from 0.
As the computed p-value is lower than the significance level alpha=0,05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.
The risk to reject the null hypothesis H0 while it is true is lower than 0,01%.

Hypothesis A.5: The Null Hypothesis

Ho: There is no significant difference between the SRQ (proportion 1) and UCT 1 (proportion 2) in measuring the sensitive question (Response 52) *I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.*

Hypothesis A.6: The Alternate Hypothesis

Ha: There is a significant difference between the SRQ (proportion 1) and the UCT 1 (proportion 2) in measuring the sensitive question (Response 52) *I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them*.

Table 3

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

SRQ Proportion 1: 0,1905	
SRQ Sample size 1: 105	
UCT 1 Proportion 2: 0,9352	
UCT 1 Sample size 2: 111	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.833 ; -0.657 [
Difference	-0.745
z (Observed value)	-16.485
z (Critical value)	1.960
p-value (Two-tailed)	< 0,0001
alpha	0.05

Note. Test interpretation:
H0: The difference between the proportions is equal to 0.
Ha: The difference between the proportions is different from 0.
As the computed p-value is lower than the significance level alpha=0,05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.
The risk to reject the null hypothesis H0 while it is true is lower than 0,01%.

B. STD's, HIV and Risky Sexual Behaviour

The second comparison method was done between the SRQ and UCT 1 in measuring sensitive questions about STD's, HIV/AIDS and Risky Sexual Behaviours.

Hypothesis B.1: The Null Hypothesis

Ho: There is no significant difference between the SRQ (proportion 1) and UCT 1 (proportion 2) in measuring the sensitive question (Response 24) *I have been treated for sexually transmitted infections (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*.

Hypothesis B.2: The Alternate Hypothesis

Ha: There is a significant difference between the SRQ (proportion 1) and the UCT 1 (proportion 2) in measuring the sensitive question (Response 24) *I have been treated for sexually transmitted infections (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*.

Table 4

Response 24: *I have been treated for sexually transmitted infections (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*

SRQ Proportion 1: 0,1905	
SRQ Sample size 1: 105	
UCT 1 Proportion 2: 0,8077	
UCT 1 Sample size 2: 104	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.724 ; -0.511 [
Difference	-0.617
z (Observed value)	-11.253
z (Critical value)	1.960
p-value (Two-tailed)	< 0,0001
alpha	0.05

Note. Test interpretation:

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

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

As the computed p-value is lower than the significance level alpha=0,05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.

The risk to reject the null hypothesis H0 while it is true is lower than 0,01%.

C. Condom Use

The seventh comparison was done between the SRQ and UCT 1 in measuring sensitive questions about condom use.

Hypothesis C.1: The Null Hypothesis

Ho: There is no significant difference between the SRQ (proportion 1) and UCT 1(proportion 2) in measuring the sensitive question (Response 48) *I have refused to use a condom.*

Hypothesis C.2: The Alternate Hypothesis

Ha: There is a significant difference between the SRQ (proportion 1) and the UCT 1 (proportion 2) in measuring the sensitive question (Response 48) *I have refused to use a condom*.

Table 5

Response 48: I have refused to use a condom

SRQ Proportion 1: 0,1143	
SRQ Sample size 1: 105	
UCT 1 Proportion 2: 0,3438	
UCT 1 Sample size 2: 111	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.337 ; -0.122 [
Difference	-0.230
z (Observed value)	-4.105
z (Critical value)	1.960
p-value (Two-tailed)	< 0,0001
alpha	0.05

Note. Test interpretation:

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

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

As the computed p-value is lower than the significance level alpha=0,05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.

The risk to reject the null hypothesis H0 while it is true is lower than 0,01%.

2. SRQ vs. UCT 2

The second method of comparison for sensitive questions about alcohol and sex was done between the SRQ against the UCT 2.

A. Alcohol and Risky Behaviour

Hypothesis A.1: The Null Hypothesis

Ho: There is no significant difference between the SRQ (proportion 1) and UCT 2 (proportion 2) in measuring the sensitive question (Response 27) *I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted.*

Hypothesis A.2: The Alternate Hypothesis

Ha: There is a significant difference between the SRQ (proportion 1) and the UCT 2 (proportion 2) in measuring the sensitive question (Response 27) *I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted.*

Table 6

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

SRQ Proportion 1: 0,4286	
SRQ Sample size 1: 105	
UCT 2 Proportion 2: 1,0683	
UCT 2 Sample size 2: 103	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.719 ; -0.561 [
Difference	-0.640
z (Observed value)	-15.756
z (Critical value)	1.960
p-value (Two-tailed)	< 0,0001
alpha	0.05

Note. Test interpretation:

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

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

As the computed p-value is lower than the significance level alpha=0,05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.

The risk to reject the null hypothesis H0 while it is true is lower than 0,01%.

Hypothesis A.3: The Null Hypothesis

Ho: There is no significant difference between the SRQ (proportion 1) and UCT 2 (proportion 2) in measuring the sensitive question (Response 41) *I have had sexual intercourse when so under the influence of alcohol that I was unable to consent*.

Hypothesis A.4: The Alternate Hypothesis

Ha: There is a significant difference between the SRQ (proportion 1) and the UCT 2 (proportion 2) in measuring the sensitive question (Response 41) *I have had sexual intercourse when so under the influence of alcohol that I was unable to consent*.

Table 7

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

SRQ Proportion 1: 0,1143	
SRQ Sample size 1: 105	
UCT 2 Proportion 2: 0,1	
UCT 2 Sample size 2: 103	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.070 ; 0.098 [
Difference	0.014
z (Observed value)	0.445
z (Critical value)	1.960
p-value (Two-tailed)	0.657
alpha	0.05

Note. Test interpretation:
H0: The difference between the proportions is equal to 0.
Ha: The difference between the proportions is different from 0.
As the computed p-value is greater than the significance level alpha=0,05, one cannot reject the null hypothesis H0.
The risk to reject the null hypothesis H0 while it is true is 65,
66%.

Hypothesis A.5: The Null Hypothesis

Ho: There is no significant difference between the SRQ (proportion 1) and UCT 2 (proportion 2) in measuring the sensitive question (Response 42) *I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol*.

Hypothesis A.6: The Alternate Hypothesis

Ha: There is a significant difference between the SRQ (proportion 1) and the UCT 2 (proportion 2) in measuring the sensitive question (Response 42) *I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol*.

Table 8

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

SRQ Proportion 1: 0,2286	
SRQ Sample size 1: 105	
UCT 2 Proportion 2: 0,2532	
UCT 2 Sample size 2: 103	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.141 ; 0.092 [
Difference	-0.025
z (Observed value)	-0.335
z (Critical value)	1.960
p-value (Two-tailed)	0.738
alpha	0.05

Note. Test interpretation:
H0: The difference between the proportions is equal to 0.
Ha: The difference between the proportions is different from 0.
As the computed p-value is greater than the significance level alpha=0,05, one cannot reject the null hypothesis H0.
The risk to reject the null hypothesis H0 while it is true is 73,79%.

Hypothesis A.7: The Null Hypothesis

Ho: There is no significant difference between the SRQ (proportion 1) and UCT 2 (proportion 2) in measuring the sensitive question (Response 52) *I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them*.

Hypothesis A.8: The Alternate Hypothesis

Ha: There is a significant difference between the SRQ (proportion 1) and the UCT 2 (proportion 2) in measuring the sensitive question (Response 52) *I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them*.

Table 9

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

SRQ Proportion 1: 0,1905	
SRQ Sample size 1: 105	
UCT 2 Proportion 2: 0,1377	
UCT 2 Sample size 2: 103	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.048 ; 0.153 [
Difference	0.053
z (Observed value)	1.124
z (Critical value)	1.960
p-value (Two-tailed)	0.261
alpha	0.05

Note. Test interpretation:
H0: The difference between the proportions is equal to 0.
Ha: The difference between the proportions is different from 0.
As the computed p-value is greater than the significance level alpha=0,05, one cannot reject the null hypothesis H0.
The risk to reject the null hypothesis H0 while it is true is 26,09%.

B. STD's, HIV and Risky Sexual Behaviour

The second comparison was between the SRQ and the UCT 2 in measuring sensitive questions about STD's, HIV/AIDS and Risky Sexual Behaviours.

Hypothesis B.1: The Null Hypothesis

Ho: There is no significant difference between the SRQ (proportion 1) and UCT 2 (proportion 2) in measuring the sensitive question (Response 5) *I am HIV positive.*

Hypothesis B.2: The Alternate Hypothesis

Ha: There is a significant difference between the SRQ (proportion 1) and the UCT 2 (proportion 2) in measuring the sensitive question (Response 5) *I am HIV positive*.

Table 10

Response 5: I am HIV positive

SRQ Proportion 1: 0,0381	
SRQ Sample size 1: 105	
UCT 2 Proportion 2: 0,12	
UCT 2 Sample size 2: 100	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.155 ; -0.008 [
Difference	-0.082
z (Observed value)	-2.058
z (Critical value)	1.960
p-value (Two-tailed)	0.040
alpha	0.05

Note. Test interpretation:
H0: The difference between the proportions is equal to 0.
Ha: The difference between the proportions is different from 0.
As the computed p-value is lower than the significance level alpha=0,05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.
The risk to reject the null hypothesis H0 while it is true is lower than 3,96%.

Hypothesis B.3: The Null Hypothesis

Ho: There is no significant difference between the SRQ (proportion 1) and UCT 2 (proportion 2) in measuring the sensitive question (Response 24) *I have been treated for sexually transmitted infections (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*.

Hypothesis B.4: The Alternate Hypothesis

Ha: There is a significant difference between the SRQ (proportion 1) and the UCT 2 (proportion 2) in measuring the sensitive question (Response 24) *I have been treated for sexually transmitted infections (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*.

Table 11

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

SRQ Proportion 1: 0,1905	
SRQ Sample size 1: 105	
UCT 2 Proportion 2: 0,26	
UCT 2 Sample size 2: 100	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.184 ; 0.045 [
Difference	-0.070
z (Observed value)	-1.111
z (Critical value)	1.960
p-value (Two-tailed)	0.266
alpha	0.05

Note. Test interpretation:
H0: The difference between the proportions is equal to 0.
Ha: The difference between the proportions is different from 0.
As the computed p-value is greater than the significance level alpha=0,05, one cannot reject the null hypothesis H0.
The risk to reject the null hypothesis H0 while it is true is 26,64%.

C. Condom Use

The eighth comparison shows the SRQ being compared to the UCT 2 in measuring sensitive questions about condom use.

Hypothesis C.1: The Null Hypothesis

Ho: There is no significant difference in base rates between the SRQ (proportion 1) and UCT 2 (proportion 2) in measuring the sensitive question (Response 48) *I have refused to use a condom*.

Hypothesis C.2: The Alternate Hypothesis

Ha: There is a significant difference between the SRQ (proportion 1) and the UCT 2 (proportion 2) in measuring the sensitive question (Response 48) *I have refused to use a condom*.

Table 12

Response 48: I have refused to use a condom

SRQ Proportion 1: 0,1143	
SRQ Sample size 1: 105	
UCT 2 Proportion 2: 0,34	
UCT 2 Sample size 2: 100	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.337 ; -0.115 [
Difference	-0.226
z (Observed value)	-3.901
z (Critical value)	1.960
p-value (Two-tailed)	< 0,0001
alpha	0.05

Note. Test interpretation:

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

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

As the computed p-value is lower than the significance level alpha=0,05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.

The risk to reject the null hypothesis H0 while it is true is lower than 0,01%.

3. UCT 1 vs. UCT 2

The third method of comparison for the sensitive topic under question was between the UCT 1 and the UCT 2.

A. Alcohol and Risky Behaviour

Hypothesis A.1: The Null Hypothesis

Ho: There is no significant difference between the UCT 1 (proportion 1) and the UCT 2 (proportion 2) in measuring sensitive question (Response 27) *I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted.*

Hypothesis A.2: The Alternate Hypothesis

Ha: There is a significant difference between the UCT 1 (proportion 1) and the UCT 2 (proportion 2) in measuring the sensitive question (Response 27) *I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted*.

Table 13

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

UCT 1 Proportion 1: 0,5192	
UCT 1 Sample size 1: 104	
UCT 2 Proportion 2: 1,0683	
UCT 2 Sample size 2: 103	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.630 ; -0.468 [
Difference	-0.549
z (Observed value)	-13.233
z (Critical value)	1.960
p-value (Two-tailed)	< 0,0001
alpha	0.05

Note. Test interpretation:

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

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

As the computed p-value is lower than the significance level alpha=0,05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.

The risk to reject the null hypothesis H0 while it is true is lower than 0,01%.

Hypothesis A.3: The Null Hypothesis

Ho: There is no significant difference between the UCT 1 (proportion 1) and the UCT 2 (proportion 2) in measuring sensitive question (Response 41) *I have had sexual intercourse when so under the influence of alcohol that I was unable to consent.*

Hypothesis A.4: The Alternate Hypothesis

Ha: There is a significant difference between the UCT 1 (proportion 1) and the UCT 2 (proportion 2) in measuring the sensitive question (Response 41) *I have had sexual intercourse when so under the influence of alcohol that I was unable to consent.*

Table 14

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

UCT 1 Proportion 1: 0,5474	
UCT 1 Sample size 1: 111	
UCT 2 Proportion 2: 0,1	
UCT 2 Sample size 2: 103	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] 0.338; 0.557 [
Difference	0.447
z (Observed value)	8.109
z (Critical value)	1.960
p-value (Two-tailed)	< 0,0001
alpha	0.05

Note. Test interpretation:
H0: The difference between the proportions is equal to 0.
Ha: The difference between the proportions is different from 0.
As the computed p-value is lower than the significance level alpha=0,05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.
The risk to reject the null hypothesis H0 while it is true is lower than 0,01%.

Hypothesis A.5: The Null Hypothesis

Ho: There is no significant difference between the UCT 1 (proportion 1) and the UCT 2 (proportion 2) in measuring sensitive question (Response 52) *I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.*

Hypothesis A.6: The Alternate Hypothesis

Ha: There is a significant difference between the UCT 1 (proportion 1) and the UCT 2 (proportion 2) in measuring the sensitive question (Response 52) *I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them*.

Table 15

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

UCT 1 Proportion 1: 0,9352	
UCT 1 Sample size 1: 111	
UCT 2 Proportion 2: 0,1377	
UCT 2 Sample size 2: 103	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] 0.717; 0.878 [
Difference	0.798
z (Observed value)	19.459
z (Critical value)	1.960
p-value (Two-tailed)	< 0,0001
alpha	0.05

Note. Test interpretation:
H0: The difference between the proportions is equal to 0.
Ha: The difference between the proportions is different from 0.
As the computed p-value is lower than the significance level alpha=0,05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.
The risk to reject the null hypothesis H0 while it is true is lower than 0,01%.

B. STD's, HIV and Risky Sexual Behaviour

The sixth comparison will be made between the UCT 1 and the UCT 2 in measuring sensitive questions about STDs, HIV/AIDs and Risky Sexual Behaviours.

Hypothesis B.1: The Null Hypothesis

Ho: There is no significant difference in base rates between the UCT 1 (proportion 1) and the UCT 2 (proportion 2) in measuring sensitive questions (Response 24) *I have been treated for sexually transmitted infections (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*.

Hypothesis B.2: The Alternate Hypothesis:

Ha: There is a significant difference between the UCT 1 (proportion 1) and the UCT 2 (proportion 2) in measuring the sensitive question (Response 24) *I have been treated for sexually transmitted infections (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*.

Table 16

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

UCT 1 Proportion 1: 0,8077	
UCT 1 Sample size 1: 104	
UCT 2 Proportion 2: 0,26	
UCT 2 Sample size 2: 100	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] 0.433; 0.662 [
Difference	0.548
z (Observed value)	9.451
z (Critical value)	1.960
p-value (Two-tailed)	< 0,0001
alpha	0.05

Test interpretation:
H0: The difference between the proportions is equal to 0.
Ha: The difference between the proportions is different from 0.
As the computed p-value is lower than the significance level alpha=0,05, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha.
The risk to reject the null hypothesis H0 while it is true is lower than 0,01%.

C. Condom Use

The following ninth comparison compared the UCT 1 and UCT 2 in measuring sensitive questions about condom use.

Hypothesis C.1: The Null Hypothesis

Ho: There is no significant difference in base rates between the UCT 1 (proportion 1) and UCT 2 (proportion 2) in measuring sensitive question (Response 48) *I have refused to use a condom*.

Hypothesis C.2: The Alternate Hypothesis

Ha: There is a significant difference between the UCT 1 (proportion 1) and the UCT 2 (proportion 2) in measuring the sensitive question (Response 48) *I have refused to use a condom*.

Table 17

Response 48: I have refused to use a condom

UCT 1 Proportion 1: 0,3438	
UCT 1 Sample size 1: 111	
UCT 2 Proportion 2: 0,34	
UCT 2 Sample size 2: 100	
z-test for two proportions / Two-tailed test:	
95% confidence interval on the difference between the proportions:	] -0.124 ; 0.132 [
Difference	0.004
z (Observed value)	0.127
z (Critical value)	1.960
p-value (Two-tailed)	0.899
alpha	0.05

Test interpretation:
H0: The difference between the proportions is equal to 0.
Ha: The difference between the proportions is different from 0.
As the computed p-value is greater than the significance level alpha=0,05, one cannot reject the null hypothesis H0.
The risk to reject the null hypothesis H0 while it is true is 89,89%.

8. Discussion

The following section will discuss the results from the experimental study in this thesis. It will look at the three methods that were compared; namely, SRQ vs. UCT 1; SRQ vs. UCT 2 and UCT 1 vs. UCT 2**.** Each of these methods were used in relation to a sensitive question within a sensitive topic. The sensitive topics were Alcohol and Sexual Behaviours; STD's, HIV and Risky Behaviours; and, Condom Use. Furthermore, the outcomes of the comparisons of the methods will be discussed in relation to the literature review and whether these results meet the objectives of this thesis. However, before the experimental study can be discussed, it is important to discuss the sensitive topics that made it possible to test the methods; hence, the norming study will be discussed.

8.1. The Norming Study

The purpose of the norming study was to norm the ranges of sensitive and innocuous items. The sensitive and non-sensitive items were determined by scaling 186 items by asking the participants whether they perceived the behaviour so sensitive that they would not want anyone else to know about it. Factor analysis was done on the 186 items to conclude which items were generally perceived as sensitive and non-sensitive; hence, the items were treated as commonsensical in terms of what was treated as a general understanding and common amongst the participants. For the analysis of the norming study, varimax rotation was used and the correlation of 0.4 and below was used as a cut-off point; therefore, any items that correlated at 0.4 and below were eliminated from the study. All the items that correlated at 0.4 and higher were included in the study; hence, sensitive and non-sensitive items with a high correlation were included in the construction of the items used in the methods to be compared (UCT 1, UCT 2 and the SRQ). The norming study made use of a counter balance design where four versions of the same questionnaire were given to the participants to ensure internal and external validity. However, even with the counter balance design in place, items had to be removed due to participant fatigue where the items were rated on a lower scale. Participant fatigue was expected as the participants had to complete and rate 186 items and this lead to their attention depreciating. Lastly, the final items were then used in the construction of the UCT 1, UCT 2 and SRQ respectively. These sensitive and non-sensitive items were divided into three sections for this thesis: Alcohol and Sexual Behaviours; STD's,

HIV and Risky Behaviours and Condom Use and allowed for the analysis of the outcomes of the base rates for each of the methods that were compared in the experimental study.

8.2. The Experimental Study

For the experimental study the items from the norming study were used to construct the sensitive and non-sensitive items to be used in these three modes of surveying (namely, UCT 1, UCT 2 and the SRQ). Each of the modes of survey was then compared using XLSTAT 2015. The result from the comparisons according to the type of item having been measured have at times yielded higher base rates for the UCT methods when compared to the SRQ. The following section will discuss these outcomes in more detail.

8.2.1. Alcohol and Risky Behaviours

8.2.1.1. SRQ vs. UCT 1

The first section of sensitive behaviours was that of Alcohol and Risky Behaviours. Within this section three responses were compared and these were namely: Response 27: *I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted*; Response 41: *I have had sexual intercourse when so under the influence of alcohol that I was unable to consent*; and Response 52: *I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.* For Response 27, the significance level was greater than alpha (0,05), therefore one cannot reject the null hypothesis and concluded that there is no significant difference between the SRQ and the UCT 1 in measuring the sensitive item of Response 27 (*I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted*). Furthermore, there is a 21 % risk of rejecting the null hypothesis when it is true. However, Response 41and Response 52 had a different outcome compared to Response 27. Both Responses 41 and 52 have significant levels less than alpha (0,05); therefore, we reject the null hypothesis and conclude that the UCT 1 yielded in a higher base rate measuring both these sensitive items as compared to the SRQ. Furthermore, the risk for rejecting the null hypothesis when it is true is 0,01% for both of these Responses. The outcome between the comparisons of the SRQ vs. the UCT 1 showed that two of the Responses (41 and 52) confirmed the UCT 1 to have higher base rates than the SRQ; therefore, the UCT 1 is the better measurement to use in analysing sensitive behaviours of alcohol and risky behaviours.

8.2.1.2. SRQ vs. UCT 2

For the comparison of the survey methods of the SRQ and the UCT 2 four types of sensitive item responses was analysed. These were namely Response 27: *I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted*; Response 41: *I have had sexual intercourse when so under the influence of alcohol that I was unable to consent*; Response 42*: I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol*; and Response 52: *I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.* Out of the outcomes for the four Responses, only Response 27 showed that the significance level was less than alpha (0,05); therefore the null hypothesis was rejected and it is accepted that the UCT 2 yielded in a higher base rate in measuring the sensitive question (Response 27) as compared to the SRQ. The risk of rejecting the null hypothesis when it is true here is 0,01%. However, Response 41, 42 and 52 showed that the significance levels were all greater than alpha (0,05); therefore we fail to reject the null hypotheses and concluded that there is no significant difference between the SRQ and the UCT 2 in measuring the sensitive questions of Responses 41, 42 and 52. For Response 41 the risk of rejecting the null hypothesis when it is true is 66%, for Response 42 it is 74% and for Response 52 it is 26%. Looking at the outcomes of these results, only one response showed that the UCT 2 yielded in a higher base rate compared to the SRQ. The other three responses showed that there were no significant differences and also the risk of rejecting the null hypothesis when it is in fact true is viewed to be high; therefore, it will be unwise to conclude that the UCT 2 is indeed the superior method to use. As a consequence, this thesis will rather conclude that the comparison of the SRQ and the UCT 2 in measuring sensitive questions about Alcohol and Risky Behaviours showed no significant difference between the two methods.

8.2.1.3. UCT 1 vs. UCT 2

In the last comparison for this section of sensitive behaviours, three Responses (27, 41, and 52) were analysed. The three responses are Response 27: *I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted*; Response 41: *I have had sexual intercourse when so under the influence of alcohol that I was unable to consent*; and Response 52: *I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.* The outcomes of all three Responses showed the significance level to be less than alpha (0,05) therefore, this thesis rejects all three null hypotheses and concluded that the UCT 2 yielded in a higher base rate in measuring the sensitive Reponses (27, 41 and

52) compared to the UCT 1. For all three of these outcomes the risk of rejecting the null hypotheses when they are indeed true are 0,01%. In this last section the UCT 2 has clearly shown to be the superior survey method to use in measuring sensitive behaviours about Alcohol and Risky Behaviours.

8.2.2. STD's, HIV and Risky Sexual Behaviours

8.2.2.1. SRQ vs. UCT 1

For the comparison of the SRQ and UCT 1 in investigating sensitive behaviours related to STD's, HIV and Risky Sexual Behaviours, Response 24: *I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)* was used. The results showed that the significance level is less than alpha (0,05); therefore, the null hypothesis is rejected and it is concluded that the UCT 1 yielded in a higher base rate in measuring sensitive question Response 24 (*I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*) as compared to the SRQ. In this comparison the UCT 1 is the better method to use in measuring sensitive questions about STDs, HIV and Risky Sexual Behaviours. Furthermore, there is a 0,01% chance of rejecting the null hypothesis when it is true.

8.2.2.2. SRQ vs. UCT 2

Only two Response questions were used in this section and these were namely Response 5: *I am HIV positive*; and Response 24: *I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)*. From the results, Response 5 showed the significant level as less than alpha (0,05) therefore, the null hypothesis was rejected and it was concluded that the UCT 2 yielded in a higher base rate in measuring the sensitive question Response 5 (*I am HIV positive*) as compared to the SRQ. However, for Response 24, the significance level was greater than alpha (0,05) therefore we fail to reject the null hypothesis and concluded that there is no significant difference between the SRQ and UCT 2 in measuring sensitive question Response 24 (*I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop))*. From the outcomes of the results it is plain to see that only one Response (5) showed that the UCT 2 yielded in higher base rates than the SRQ; however, the second Response (24) showed that there was no significant difference. Furthermore, the risk in rejecting the null hypothesis when it is true for Response 5 is 3.96% whereas for Response 24 it is 26,64%. In conclusion,

further tests need to be done into sensitive questions about STDs, HIV and Risky Sexual Behaviours comparing the survey methods of the SRQ and UCT 2. Lastly, as mentioned earlier, some questions might have been scaled on the lower end when the participants completed the studies and this could have been due to fatigue and losing concentration.

8.2.2.3. UCT 1 vs. UCT 2

Finally for the comparison of the UCT 1 and the UCT 2, Response 24: *I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)* was used to measure the outcome of the modes of surveying. The result was that the significant level was less than alpha (0,05); therefore, the null hypothesis was rejected and it was concluded that the UCT 2 yielded in a higher base rate when measuring sensitive Response 24 (*I have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, genital herpes, genital ulcer, idrop)* compared to the UCT 1. In addition the risk of rejecting the null hypothesis when it is true was 0,01%. It is evident that the UCT 2 was the better method to use in measuring sensitive behaviours about STDs, HIV and Risky Sexual Behaviours than the UCT 1.

For the comparisons of the survey methods in measuring sensitive behaviours about STDs, HIV and Risky Sexual Behaviours, the results showed that the UCT methods had higher base rates for all three comparisons. For the first two comparisons both the UCT 1 and UCT 2 resulted in higher base rates than the SRQ method but the last comparison showed that the UCT 2 was the better method to use when compared to the UCT 1.

8.2.3. Condom Use

8.2.3.1. SRQ vs. UCT 1

The comparison of the SRQ vs. the UCT 1 survey methods, Response 48: *I have refused to use a condom*, was used in this comparison. The significance level is less than alpha (0,05), therefore the null hypothesis was rejected and we concluded that the UCT 1 yielded in a higher base rate in measuring sensitive question Response 48 (*I have refused to use a condom*), as compared to the SRQ. In addition, the risk of rejecting the null hypothesis when it is true was, 0,01%. From this comparison the UCT 1 is the better method to use in measuring sensitive questions about Condom Use.

8.2.3.2. SRQ vs. UCT 2

For the second comparison, Response 48: *I have refused to use a condom*, was also used. The results show that the significance level is less than alpha (0,05), therefore, the null hypothesis was rejected and it was concluded that the UCT 2 yielded in a higher base rate in measuring sensitive question Response 48 (*I have refused to use a condom*) as compared to the SRQ. The risk here of rejecting the null hypothesis when it is true is also 0,01% as per comparison above. From the results it is evident that the UCT 2 is the better survey method to use in measuring sensitive behaviours about Condom Use.

8.2.3.3. UCT 1 vs. UCT 2

For the last comparison, Response 48: *I have refused to use a condom*, was also used to measure the better survey method between the UCT 1 and UCT 2. The results show that the significance level is greater than alpha (0,05), therefore we fail to reject the null hypothesis and conclude that there is no significant difference between the UCT 1 and UCT 2 in measuring sensitive question Response 48 (*I have refused to use a condom*). Furthermore, the risk of rejecting the null hypothesis when it is true is 89,89%.

In conclusion for the survey methods for Condom Use, it is evident that two results showed significant difference and both in the favour of the UCT 1 and UCT 2 techniques and not the SRQ. However, the last result showed that there is no significant difference in the base rates between the UCT 1 and UCT 2 when compared to each other.

8.2.4. Sensitive Responses and Methods of Surveying

The sensitive behaviour results encountered in this research shows a clear difference between the UCT survey methods and the SRQ and also the UCT 1 and UCT 2 methods when compared using the sensitive responses highlighted in this and the previous sections. In general, the outcome of the results was that both UCT methods had higher base rates than the SRQ method which showed that those responses encountered were viewed by the participants to be “laden with negative evaluation” and highly private (LaBrie & Earleywine, 2000, p. 321). Furthermore, the outcomes of the higher base rates for the UCT methods against the SRQ method showed that the level of self-disclosure were higher for the UCT methods than for the SRQ methods. Reflecting back on the literature, three types of ways were mentioned in which participants might view sensitive questions. These were namely: intrusiveness, social desirability and threat of disclosure. Considering the findings where the SRQ resulted

in poor response rates, it is likely that participants viewed the questions as an invasion of their privacy or even offensive (Einarsen & Våland, 2010). These questions could have resulted in being stressful for the participants as they were asked to respond to questions that are private to them. This is evident from the results for Response 5 according to the comparison between the SRQ and UCT 2 where the outcome of the UCT 2 showed that participants agreed to the statement that they are HIV positive. Also, the UCT 2 was the better method in measuring such a sensitive question as the participants were ensured that the method gave them greater anonymity than the SRQ. Hence, trust was inspired and the participants felt safe enough to disclose this type of sensitive information (Chaudhuri & Christofides, 2007; Coutts & Jann, 2008; Dalton et al., 1994; Dickson-Swift et al., 2008; LaBrie & Earleywine, 2000). The results for the SRQ indicate that participants may have underreported their HIV status due to the possibility that they felt the question was intrusive. Participants may have also felt threatened by the question, or they may have felt that the information may be given to a third party, which may result in them being reprimanded or judged negatively (Einarsen & Våland, 2010).

8.2.4.1. UCT methods and the SRQ: Condom Use

Another clear result in terms of threat of disclosure was from the sensitive responses about Condom Use. From the literature, condom use can be seen as very problematic in South Africa in terms of the different cultures. For men with more traditional attitudes in South Africa, using a condom might stigmatise them especially when it comes to the construction of masculinity (Noar et al., 2006). From previous research, men's attitudes towards condom use has been seen as negative; hence, condoms are used less consistently or not at all (Peacock et al., 2008). Therefore, condom use is a very sensitive topic amongst some men in South Africa and because of this it is expected that the results of the SRQ may have been underreported or social desirable responses could have been given. For both of the comparisons of the UCT 1 against the SRQ and the UCT 2 against the SRQ the results showed that the UCT methods had higher base rates than the SRQ method. Also, if both of the UCT methods have higher base rates compared to the SRQ, then they surely have more validity and reliability than the SRQ when researching sensitive questions about condom use. These results show that both of the UCT methods are better for measuring condom use when compared to the SRQ method.

8.2.4.2. UCT methods and SRQ: Alcohol and Risky Sexual Practices

Previous research has shown that a correlation between alcohol and risky sexual practices do exist. The excessive consumption of alcohol results in psychological problems, risky sexual behaviours, poor decision making and so on (LaBrie & Earleywine, 2000; Walsh & Braithwaite, n.d.). The results from this study can concur with previous research. The comparison between the SRQ and UCT 1 for the sensitive topic of Alcohol and Risky Sexual Behaviours showed that the participants validated the UCT 1 method from the results of the higher base rates. In addition, the UCT 1 provided trust and anonymity for the participants to disclose that Response 41 and 52 were true to them. For the comparison of the SRQ and the UCT 2 method, more participants disclosed using the UCT 2 method that Response 27 was true to them.

8.2.4.3. UCT methods and the SRQ: STD's, HIV and Risky Sexual Behaviours

Intervention and prevention methods to reduce HIV in South Africa have mostly targeted the individual person. However, the attitudes of the individual person, their knowledge and practices embedded in their cultures are also important in creating better methods to reduce the prevalence rate of HIV (Ragnarsson et al., 2010). Research should opt to look at the cultural orientation of the individual and the importance structural factors play in sexual relationships between individuals. Looking at the outcomes of the results between the UCT 1, UCT 2 against the SRQ; the UCT methods fared better in that it resulted in higher base rates than the SRQ for Response 24 (UCT 1) and Response 5 (UCT 2). As a result, the nature and culture of the university students showed that using the UCT method the participants felt protected and trusted the method to disclose that they have been treated for a STD infection and also are HIV positive.

From the sensitive sections described above, it is clear that the university students have indeed engaged in risky sexual practices such as not using condoms that could ultimately result in the infection of a STD and HIV as this is seen in the section discussed above. Another culture that is prevalent amongst university students is the culture of drinking alcohol and engaging in risky sexual behaviours whilst intoxicated where participants were either unable to consent, hoping to have sexual intercourse by getting someone else intoxicated or engaging in sexual intercourse that was later regretted. The comparison between the UCT methods and the SRQ makes it clear that the UCT methods were indeed the stronger methods in detecting whether participants engaged in these risky sensitive

behaviours, and in doing so could lead to putting the proper interventions in place or reviewing current interventions or prevention methods such as condom use since it is clear that condom use is dependent upon the culture the individual is embedded in. Preventing the spread of HIV through the distribution of condoms will not be successful if the traditions and cultures of individuals are misunderstood/prevention will be successful if the traditions are understood (Peacock et al., 2008; Ragnarsson et al., 2010).

8.2.5. UCT 1 against UCT 2: in search of the better method

For all three of the sensitive sections discussed above, the UCT 2 had higher base rates than the UCT 1. Therefore, for all the responses the null hypothesis was rejected and it was concluded in general that the UCT 2 survey method was the better method to use when compared to the UCT 1. As discussed in the literature review, there is some debate about the validity and reliability of the UCT 1 method. To recall, all of the participants were in a group of a minimum of 50 and no one was individually assessed (LaBrie & Earleywine, 2000). However, a concern of the UCT 1 was the layout of the lists (Coutts & Jann, 2008). Chaudhuri and Christofides (2007) suggested one way to combat this concern was to restructure the lists to allow for the innocuous items to not be unrelated to the sensitive item. This is what was done in this thesis and the outcomes clearly suggest that having the innocuous items related to the sensitive item created more validity to the UCT method. Furthermore the participant, in completing the UCT 2, might have the impression that the result they are reporting serves as a "meaningful piece of information" (Chaudhuri & Christofides, 2007, p. 592).

Before a concluding the discussion section, it needs to be mentioned that the results did not come without any complications or limitations and these could also provide a reason for the outcome of the results. Firstly, the reporting on certain sensitive items could have varied across gender. Males and females both have different interpretations of the items and this could possibly have influenced the results. For example, what is perceived by males to be negative stigmatisation, could be different for women; hence, this could lead to the underreporting of the SRQ (Starosta & Earleywine, 2014). Furthermore, the number of females who participated in this study is greater than the number of males. Also, most of the participants in this study fell between the ages of 18-23. Hence, the participant sample was not evenly distributed across gender, age and race. All of these factors could have explained the outcome of the results. In addition, another limitation and implication for this thesis is

that it did not focus on the correlation of gender and the outcome of the results. A recommendation for future researcher could be to elaborate on the implications and impact the items have for both women and men as these implications determine how the participants will respond to the SRQ and UCT items (Starosta & Earleywine, 2014). Lastly, the participants of this study are university students; therefore, the results cannot be generalised to other populations and gives the reader a diminished insight to sensitive sexual behaviours of a greater South African population.

One last implication to mention is the performance of the UCT against the SRQ in relation to the literature review case study of the UCT against the RRT. In the literature review case study of the RRT and UCT done by Coutts and Jann (2008), the UCT by far performed better when compared to the RRT. However, in the experimental study of this thesis, the UCT's performance is implicated when compared to the SRQ. One of the reasons why the UCT does not perform as well as it should, could be because of the ease of use of this method. When compared to the SRQ, the UCT's ease of use is more complicated and this is evident in the unequal sample sizes of the UCT methods. The sample sizes of the UCT methods are unequal as a result from missing data or outliers that had to be removed as participants incorrectly answered the questions; hence, showing that participants did not easily understand and/or follow the instructions of the UCT methods. For the comparison between the UCT and RRT, the RRT's instructions were more complicated to follow; therefore, when the RRT was compared to the UCT, the UCT was less complex (Coutts & Jann, 2008). However, for the experimental study, it seems that the UCT's instructions are more complicated than those of the SRQ. Furthermore, students at university are continually exposed to the SRQ throughout their years of studying. In other words, the SRQ could seem more familiar and less complicated to them. In addition, if the SRQ is a more familiar method to the students, the UCT might be unfamiliar and lack at inspiring trust.

To summarise, survey methods are viewed problematic in combating underreporting, social desirability, intrusiveness and item non-response (Coutts & Jann, 2008). This is evident in the results where the SRQ method did not yield in higher base rates when compared to the UCT methods in the sensitive topics of Alcohol and Risky Behaviour; STD's, HIV and Risky Sexual Behaviours; and, Condom Use. Furthermore the UCT survey method, when compared to the SRQ, showed that non-response was limited, the UCT inspired trust in the participants as it promised more anonymity as the participants cannot be traced via any information and

also that the method does not work on an individual scale; hence, the participants had enough security to want to disclose on sensitive behavioural topics (Coutts & Jann, 2008; LaBrie & Earleywine, 2000; Walsh & Braithwaite, 2008). Therefore, this thesis concludes that the UCT survey method when compared to the SRQ method is the better method to use when analysing and researching sensitive behavioural topics. However, when there is a comparison between the UCT 1 method and the UCT 2 method, the UCT 2 method, according to the results from this thesis, is the better, stronger and more valid method to use. Furthermore, the UCT methods results are important as they provide more of an accurate assessment of sensitive sexual behaviours and this "is crucial for developing effective STI prevention interventions among target populations" and also working towards understanding and preventing the spread of HIV (Starosta & Earleywine, 2014, p. 198; Noar, Cole & Carlyle, 2006).

9. Conclusion

In conclusion, this thesis has looked at the comparison of survey methods of the SRQ, UCT 1 and UCT 2 in relation to topics operationalised as sensitive by the university participants. In order to test the comparison of the survey methods to see which one resulted in the higher base rates and has more validity and reliability to research sensitive behaviours, a norming study was done to operationalise what was perceived to be sensitive within the community of university students who partook in this study. Factor analysis and Varimax Rotation was used to identify the final items that would be used within the experimental study. These items were constructed within the SRQ, UCT 1 and UCT 2 methods respectively. After the completion of the data collection, XLSTAT 2015 was used to analyse the proportions of the survey methods to determine which methods yielded higher base rates. These were discussed in depth in the discussion.

From previous research and also in the literature review of this study, sensitive behavioural research plays an important role in determining the prevalence of HIV, STD's and also the consequences of not using condoms, and intoxication and risky sexual practices. All of these items are applicable to the community of university students who partook in this study. Furthermore, insight from the methods of these sensitive behaviours can help assist in putting in place better prevention and intervention methods. Most importantly, this study and previous research also shows the implications of risky sexual behavioural practices and that research will need to target and broaden their scope about the cultural systems people are embedded in (Dickson-Swift et al., 2008; LaBrie & Earleywine, 2000; Peacock et al., 2008; Ragnarsson et al., 2010).

This study aimed to norm the ranges of sensitive and innocuous items by the implementation of a norming study and from the norming ranges, the UCT 1 and UCT 2 were compared to determine the most effective method to use in measuring sensitive items. From the discussion and results the UCT 2 showed to be more promising in measuring sensitive items when compared to the UCT 1. Another aim was to compare the UCT (1 and 2) against the SRQ to see which method yields higher base rates and for most of the outcomes the UCT methods yielded higher base rates than the SRQ; however, there were outcomes with no significant differences.

In conclusion, the UCT methods (1 and 2 and especially true for 2) are still novel methods in that they are still being tested to validate the methods and to have greater validity that it can be stated with surety that these methods are the most reliable and valid methods to use in future research into sensitive areas. Furthermore, the UCT 2 seems to be a very promising method for future research and is also a prime and stronger candidate against the UCT 1 in that it provides more validity than the UCT 1 currently provides. However, because of the novelty of both of these methods, it is suggested that more research needs to be done using the UCT 1 and UCT 2 methods, especially so for the UCT 2 method.

10. Limitations and Recommendations

10.1. Participants, Norming Study and Sensitive Items

Some limitations are that this study only focuses on university students, whereas if it focused on a wider range of the population, the study would be able to generalise better to the contexts of South Africans. Also, looking at the norming and experimental study, the participants had to complete 186 items and this could have caused fatigue and the lack of understanding the instructions could have been compromised. This is especially important for the instructions of the norming study as the participants may have initially rated the items as sensitive and then half way through or later on treated the items as what was true to them. Also, the perception of what was sensitive to each participant will be different from the next participants. Not all participants come from the same cultural background; therefore, what is sensitive may be different to different people. Hence, the study used commonsensical definitions of what was sensitive to most of the participants. However, this has its own limitations as the study is standardizing sensitive items across the board to all participants.

10.2 Experimental Study

For the experimental study, the demographics were not equally spread across the board; hence, there were more females than males and younger students than older students. The experimental study gives a better idea of what a younger population of females perceived to be sensitive and this causes implications in generalising to all university students. In addition, the instructions of the UCT methods seem to be more complicated than those of the SRQ and this is evident in missing data and outliers from both the UCT 1 and UCT 2 methods. Lastly, the responses in the results may be too few to make sound judgement on the comparisons of the UCT and SRQ methods. Therefore, for future research, more responses need to be included in analysis that will also need a wider and bigger range of participants to partake in the study.

10.3 Future directions for Sensitive Research

For future directions in researching the UCT methods, researchers should work on making and refining the instructions to the method to be less complicated and easily understood. Researchers should also aim at recruiting more participants and keeping in mind to spread the demographics equally across the board. Furthermore, a secondary study should be done on

what women and men perceive to be sensitive as their responses to the methods will be influenced by these perceptions. The implications of the sensitive topics discussed in this thesis were only touched on. For future research these implications should be discussed in greater detail and it might be valuable to even enlist a qualitative study to record the participants' perception on the different methods and to which they prefer in answering about sensitive research, i.e. which method provides more trust, anonymity and self-disclosure. Lastly, the UCT 2 seemed to be fairly successful in this study; however, further research still needs to be extensively done to validate the UCT 2 method.

11. References

Abowitz, D. A., & Toole, T. M. (2010). Mixed Method Research : Fundamental Issues of Design , Validity , and Reliability in Construction Research. Journal of Construction Engineering and Management, *136*(1), 108–117. DOI: 10.1061/_ASCE_CO.1943-7862.0000026

American Psychological Association. (2010). *Ethical Principles of Psychologists and Codes of Conduct.* Retrieved from http://www.apa.org/ethics/code/principles.pdf

Arentoft, A., Van Dyk, K., Thames, A. D., Sayegh, P., Thaler, N., Schonfeld, D., LaBrie, J., & Hinkin, C. H. (2016). Comparing the unmatched count technique and direct self-report for sensitive health-risk behaviors in HIV+ adults. *AIDS Care, 28*(3), 370-375.

Boekeloo, B., Schiavo, L., Rabin, D. L., Conlon, R. T., Jordan, C. S., & Mundt, D. J. (1994). Self-Reports of HIV Risk Factors by Patients at a Sexually Transmitted Disease Clinic: Audio vs Written Questionnaires. *American Journal of Public Health*, *84*(5), 754-760.

Bostoen, K., Bilukha, O. O., Fenn, B., Morgan, O. W., Tam, C. C., ter Veen, A., & Checchi, F. (2007). Methods for health surveys in difficult settings: charting progress, moving forward. *Emerging Themes in Epidemiology, 4*(13), 1-4.

Chaudhuri, A., & Christofides, T. C. (2007). Item Count Technique in estimating the proportion of people with a sensitive feature. *Journal of Statistical Planning and Inference, 137*(21), 589–593. http://doi.org/10.1016/j.jspi.2006.01.004

Coutts, E., & Jann, B. (2008). Sensitive Questions in Online Surveys: Experimental Results for the Randomized Response Technique (RRT) and the Unmatched Count Technique (UCT). *Sociological Methods & Research*, *40*(1), 169–193. http://doi.org/10.1177/0049124110390768

Dalton, D. R., Wimbush, J. C., & Daily, C. M. (1994). Using the Unmatched Count Technique (UCT) to estimate base rates for sensitive behaviour. *Journal of Personnel Psychology*, *47*, 817–828.

Dickson-Swift, V., James, E. L., & Liamputtong, P. (2008). *Undertaking Sensitive Research in the Health and Social Sciences: Managing Boundaries, Emotions and Risks*. Cambridge: Cambridge Press.

Droitcour, J., Caspar, R. A., Hubbard, M. L., Parsley, T. L., Visscher, W., & Ezzati, T. M.

(1991). In P.P. Biemer, R. M. Groves, L. E. Lyberg, N. A. Mathiowetz & S. Sudham (Eds.), *Measurement Error in Surveys* (pp. 185–209). New York: Wiley & Sons Inc.

Einarsen, K., & Våland, T. I. (2010). Challenges of obtaining valid sensitive data Work in progress. In *Challenges of obtaining valid sensitive data Work in progress* (pp. 1–13). Budapest, Hungary: 26th IMP-Conference. Retrieved from http://www.impgroup.org/uploads/papers/7508.pdf

Etchegaray, J. M., & Fischer, W. G. (2010). Understanding Evidence-Based Research Methods: Reliabiiity and Validity Considerations in Survey Research. *HERD*, *4*(1), 131–135.

Fenton, K. A., Johnson, A. M., McManus, S., & Erens, B. (2001). Measuring sexual behaviour: Methodological challenges in survey research. *Journal of Sexually Transmitted Infections, 77,* 84-92.

Glynn, A. N. (2010). *What Can We Learn with Statistical Truth Serum ? Design and Analysis of the List Experiment.* Retrieved from http://scholar.harvard.edu/aglynn/files/sts.pdf

Gravetter, F. J., & Forzano, L.B. (2006). *Research methods for the behavioural sciences* (3rd ed.). Belmont, California: Wadsworth/ Cengage Learning.

HEAIDS, 2010. HIV prevalence and related factors: Higher Education Sector Study, South Africa, 2008–2009. Pretoria: Higher Education South Africa.

Kays, K., Gathercoal, K., & Buhrow, W. (2012). Computers in Human Behavior Does survey format influence self-disclosure on sensitive question items ? *Computers in Human Behavior*, *28*(1), 251–256. http://doi.org/10.1016/j.chb.2011.09.007

LaBrie, J. W., & Earleywine, M. (2000). Sexual Risk Behaviors and Alcohol: Higher Base Rates Reveald using the Unmateched-Count Technique. *The Journal of Sex Research*, *37*(4), 321–326.

Noar, S. M., Cole, C., & Carlyle, K. (2006). Condom Use Measurement in 56 Studies of Sexual Risk Behavior : Review and Recommendations. *Archives of Sexual Behavior*, *35*(3), 327–345. http://doi.org/10.1007/s10508-006-9028-4

Peacock, D., Redpath, J., Weston, M., Evans, K., Daub, A., Greig, A., & Justice, G (2008). *Literature Review on Men, Gender, Health and HIV and AIDS in South Africa.* Sonke Gender Justice: Cape Town.

Ragnarsson, A., Townsend, L., Ekström, A. M., Chopra, M., & Thorson, A. (2010). The construction of an idealised urban masculinity among men with concurrent sexual partners in a South African township. *Global Health Action*, *3*, 1–7. http://doi.org/10.3402/gha.v3i0.5092

Ray, J. J. (1984). The Reliability of Short Social Desirability Scales. *Journal of Social Psychology, 123,* 133-134.

Starosta, A. J., & Earleywine, M. (2014). Assessing base rates of sexual behavior using the unmatched count technique. *Health Psychology & Behavioural Medicine, 2*(1), 198-210.

Tredoux, C., & Durrheim, K. (2002). *Numbers, Hypotheses and Conclusions.* Lansdowne: UCT Press.

Walsh, J. A., & Braithwaite, J. (2008). Self-Reported Alcohol Consumption and Sexual Behavior in Males and Females: Using the Unmatched-Count Technique to Examine Reporting Practices of Socially Sensitive Subjects in a Sample of University Students. *Journal of Alcohol Drug Education*, *52*(2), 49–73.

Wassenaar, D. (1999). Ethical issues in social science research. In M. Terre Blanche, K. Durrheim & D. Painter (Eds.), *Research in Practice: Applied Methods For The social Sciences* (pp. 60-79). Cape Town: University of Cape Town Press.

Zion, D., Gilliam, L., & Loff, B. (2000). The Declaration of Helsinki, CIOMS and the ethics of research on vulnerable populations. *Nature Medicine, 6*(6), 615-617. DOI: 10.1038/76174

12. Appendices

Appendix One

Sensitive items: Normative study questionnaire:

Participant 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 the researchers should not know this about you, or that you would be ashamed if the researchers knew this about you. We ask you to rate each item on a scale according to how much you agree that you wouldn't want the researchers to know this, and how ashamed you would be if the researchers did know this about you. Please pretend or assume that all the items are true for you when you do the ratings.

We ask you to rate the items on two scales:

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

I would be ashamed if the researches knew the following about me **if it were true.**

(Agreement scale: **Strongly Agree;Undecided;Disagree;Strongly Disagree**

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 □

		1. Strongly Agree	2. Agree	3. Undecided	4. Disagree	5. Strongly Disagree
1	Have had dental work done					
2	Know where to buy condoms					
3	Have more than one sibling					
4	Have a favourite soccer team					
5	Would consider myself a sports fan					
6	Think one alcoholic drink a day is healthy					
7	Have seen a doctor in the last year					
8	Have been/ am in a sexual relationship in exchange for things I need (e.g. food, transport, accommodation, fees).					
9	Visit the Library more than once a week					

10	Have had sexual intercourse with someone who was too intoxicated to give consent.						
11	Am on Facebook						
12	Know where to get condoms for free						
13	Know what's going on in SA politics						
14	Know where to get the contraceptive pill						
15	Often have had sex with my boyfriend/girlfriend because I feel that I have to						
16	Am comfortable with my sexual desires						
17	Have broken a limb						
18	Have raped someone						
19	Use the internet almost every week						
20	Have hay fever						
21	Have an ipad or tablet						
22	Take care of my body						
23	Like reading the editorial section of the local newspaper						

24	Have a shoe size smaller than size 6					
25	Work to earn money while I am studying full time					
26	Always read before going to sleep					
27	Have been aware of sexual feelings before the age of 10					
28	Am HIV positive					
29	Always have sugar in tea or coffee					
30	Can type reasonably well					
31	Have gone to a traditional healer when sick					
32	Have been slightly drunk					
33	Am aware of my sexuality					
34	Am concerned about contracting a sexually transmitted disease					
35	Exercise regularly					

36	Have engaged in light petting					
37	Try to eat healthily					
38	Have taken illegal drugs					
39	Exercise by playing sports					
40	Have lost interest in politics					
41	Am a soccer fan					
42	Watch British football					
43	Know the name of a Maritzburg United soccer player					
44	Have been aware of sexual feelings between 10 and 12 years					
45	Have engaged in heavy petting					
46	Have used a condom the last time I had sex					
47	Know about the "morning after" pill					
48	Have gone to the doctor when sick					

49	Use the contraceptive pill					
50	Have had more than one sexual partner in the last month					
51	Know the name of the new Kenyan president					
52	Have raped someone together with one or more of my friends					
53	Am waiting for the right partner before having sex					
54	Won't go in a car with a driver who has been drinking					
55	Sometimes smoke cigarettes					
56	Have been in a sexual relationship in exchange for goods (e.g. cell phone, fashionable clothes).					
57	Regret the first time I had sex					
58	Have had a wound that needed stitches					
59	Have experimented casually with various drugs					
60	Have asthma now					
61	Am a vegetarian					
62	Have one or more pets					

63	Have had sex with a partner who was 10 or more years older than me at the time					
64	Don’t drink alcohol					
65	Usually choose sugar free soft drinks					
66	Have travelled outside South Africa					
67	Use sms's more than email					
68	First had sex between the ages of 14 and 16					
69	Had sex when I was emotionally ready					
70	Had at least one parent who smoked cigarettes					
71	Am comfortable with casual sex					
72	Am waiting till marriage to have sex					
73	Have been treated for a sexually transmitted infection (e.g. syphilis, gonorrhoea, herpes, genital ulcer, *idrop*)					
74	Drink coffee					
75	Have been in a car accident as a passenger					
76	Have taken drugs intravenously (injectable)					
77	Have sinus problems					
78	Am careful with my diet					
79	Have been to London					

80	Live alone					
81	Have my driver's license					
82	Like documentaries					
83	Went to a government high school					
84	Have had sex with someone who wasn't my regular partner (wife/husband/boyfriend/girlfriend/partner)					
85	Have a brother					
86	Think alcohol should also be illegal					
87	Have been tested for HIV					
88	Have gone to the chemist when sick					
89	Am at risk for HIV					
90	Support legalising drugs					
91	Think sex is ok in a committed relationship					
92	Live in shared accommodation					
93	Know my HIV status					
94	Often watch television late at night					
95	Am careful about my diet					
96	Have often drunk alcohol					
97	Don't mix with people who drink alcohol					
98	Would consider myself a fan of pop music					

99	Have seen a dentist in the last two years					
100	Smoke cigarettes in social situations					
101	Have more than one sister					
102	Had sex when I was younger than 14					
103	Always use condoms when having sex					
104	Have been/am in a sexual relationship mainly because the partner provides me with things I want (e.g. airtime, food, clothes, transport)					
105	Have watched the movie "Tsotsi"					
106	Am entitled to have my partner pay for things for me					
107	Never exercise					
108	Never drink fizzy drinks					
109	Own at least one cell phone					
110	Don’t drive when I have been drinking					
111	Have an internet connection at home					
112	Watch the news on TV at least 3 times a week					
113	Reading is a hobby					
114	Think smoking cigarettes is more harmful than smoking dagga					
115	Regularly get health check-ups					

116	Don’t normally eat breakfast					
117	Know what a “conversion” is in rugby					
118	Have a favourite TV show					
119	Have a dog as a pet					
120	Have my own vehicle					
121	Have seen any kind of health practitioner in the last year					
122	Can speak more than 2 languages reasonably well					
123	Have had diagnostic tests done in the last year					
124	Have been in a car accident					
125	Went to a private high school					
126	Subscribe to electronic newsletters					
127	Have had sex after drinking					
128	Have not had sex					
129	Have had more than two sexual partners in the last three months					
130	Have gone to a local clinic when sick					
131	Have taken antibiotics in the last year					
132	Take vitamins almost everyday					
133	There’s a handgun in my house					

134	Only use condoms with a new partner					
135	Exercise at least 3 times a week					
136	Have lived outside of South Africa					
137	Am sexually active					
138	Have refused to use a condom					
139	Have never been in hospital					
140	Have watched the movie “Jerusalema”					
141	Had sex the first time with someone when I did not really feel like doing it					
142	Have had sex with someone who isn’t a regular partner because I’ve needed material things (e.g. rent, food, cosmetics).					
143	Have weekend/after hours work for money					
144	Had asthma as a child					
145	Am comfortable with my sexuality					
146	Have felt peer pressure to drink alcohol.					
147	Can drive quite well after two drinks					
148	Regularly post items on Facebook					
149	Have had sex with more than two partners in the same time period					

150	Have been forced to have sex					
151	Have had to slap, kick or bite to stop someone having sex with me					
152	Have engaged in sexual intercourse while under the influence of alcohol that I later regretted.					
153	Regret having had sex					
154	Have pets at home					
155	Have lived in at least three different provinces					
156	Have had unprotected sex while knowing I am HIV positive and/or have a sexually transmitted infection					
157	Have had sex with more than one partner in the same time period					
158	Have had sex against my wishes because someone used coercion or force, while under the influence of alcohol					
159	Don’t mix with people who use drugs					
160	Am careful about risky sex					
161	Have a student loan from a bank					
162	Have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.					

163	Am comfortable receiving gifts from my sexual partner					
164	Have been sexually active but not had intercourse (vaginal or anal)					
165	Have been coerced or forced to have sexual intercourse by someone who was under the influence of alcohol.					
166	Am a virgin					
167	Sometimes drink alcohol socially					
168	Have been kissed					
169	Have been pressurised to have sex without a condom					
170	Have been to Durban					
171	Drink tea					
172	Drink alcohol in moderation					
173	Have forced someone to have sex with me					
174	Have had sexual intercourse when so under the influence of alcohol that I was unable to consent.					
175	Felt ready when I had sex the first time					
176	Own a laptop computer					
177	Have had sex with a teacher or lecturer					

178	Have been in an accident as driver (car/motorcycle/bicycle)					
179	Have blacked out from drinking too much alcohol					
180	Smoke dagga occasionally					
181	Have drunk alcohol					
182	Have allergies					
183	Have a shoe size over 7					
184	Have had sex with someone when I was so drunk that I do not remember it					
185	Often watch television late at night					
186	First had sex between the ages of 14 and 18					
187	Have had sexual intercourse without a condom being used while under the influence of alcohol.					
188	Know the name of the premier of KwaZulu-Natal					
189	Have a cat as a pet					
190	Have lived outside South Africa					
191	Had the usual childhood illnesses					
192	Use a condom					
193	Live with my family					

194	Have been/am in a sexual relationship mainly for material benefits (e.g. gifts, food, clothes).					
195	Am careful about what I put into my body					
196	Have had sex with someone who was in an authority position in relation to me					
197	Use the internet from my cellphone					
198	Have watched the movie "Argo"					
199	Am comfortable with petting until am in a committed relationship					
200	Have consumed alcohol until intoxicated/drunk					
201	Dagga is not harmful					
202	Read the local paper almost everyday					
203	Became aware of sexual feelings from 13 years onwards					
204	Have read the book “Lord of the files”					
205	Have coerced or forced someone who was under the influence of alcohol to have sexual intercourse with me.					
206	Look after my body					

Appendix Two

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 ☐

Where is your place of residence whilst at university?:

☐ University residence

☐ Digs (accommodation off campus with friends)

☐ Live on my own

☐ Live at home with family/relatives

☐ Other: _____

How are your studies being paid for? (tick more than one if applicable)

Self funded (savings/am working) ☐ ; Parents/relatives ☐ ; Bursary/Scholarship ☐ ;

Loan ☐ ; Financial aid ☐ ; Other: _____ ☐

Appendix Three

Social Desirability Scale

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

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

Appendix Four

UCT 1 and UCT 2 Set-up

The items to be included in these methods will be determined by the normative pilot study.

Table to show the set-up for the UCT 1:

The first group of participants will complete form one. The second group of participants will complete form 2 which includes the sensitive item.

Form 1	Form 2
Innocuous unrelated item	Innocuous unrelated item
Innocuous unrelated item	Innocuous unrelated item
Innocuous unrelated item	Sensitive Item
	Innocuous unrelated item

Table to show the set-up for the UCT 2

The first group of participants will complete form one. Whereas the second group of participants will complete form two which contains items similar to the sensitive item and the sensitive item itself.

Form 1	Form 2
Innocuous unrelated item	Related item
Innocuous unrelated item	Related item
Innocuous unrelated item	Sensitive Item
Innocuous unrelated item	Related Item
Innocuous unrelated item	Related item

Appendix Five

SRQ set-up

The SRQ will be a questionnaire in a true and false format.

For example:

Are these statements true or false to you?

(Statement from the normative study) Circle the correct response to you:

True or False

Appendix Seven

Informed consent

Information and Consent for participation in the study: A within-subjects repeated measures comparative study of the effect of two data collection methods on disclosure rates of sensitive behaviours

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 counselling 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 Eight

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 Nine

QUESTON ORDER

ACASI & SRQ

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

26. I have engaged in light petting (kissing, fondling).
28. I have felt peer pressure to drink alcohol.
27. I have engaged in sexual intercourse whilst under the influence of alcohol that I later regretted.
29. I subscribe to electronic newsletters.
30. I have forced someone to have sex with me.
31. I have gone to a local clinic when sick.
32. I have gone to the chemist when sick.
33. I have gone to the doctor when sick.
34. I live with my family.
35. I have had diagnostic tests done in the last year.
36. I have had more than two sexual partners in the last three months.
37. I have had sex with a partner who was 10 or more years older than me at the time.
38. I have had sex with a teacher or lecturer.
39. I have had sex with someone when I was so drunk that I do not remember it.
40. I have had sex with someone who wasn't a regular partner because I've needed material things (e.g. rent, food, cosmetics).
41. I have had sexual intercourse when so under the influence of alcohol that I was unable to consent.
42. I have had sexual intercourse without a condom being used whilst I was under the influence of alcohol.
43. I have had to slap, kick or bite someone to stop them from having sex with me.
44. I have had unprotected sex whilst knowing I am HIV positive and/or have a sexually transmitted infection.
45. I have often drunk alcohol.
46. I have raped someone.
47. I have raped someone together with one or more of my friends.
48. I have refused to use a condom.
49. I have seen a doctor in the last year.
50. I have seen any kind of health practitioner in the last year.

51. I have taken antibiotics in the last year.
52. I have tried to get someone else intoxicated in the hopes of having sexual intercourse with them.
53. I used a condom the last time I had sex.
54. I have watched the movie “Tsotsi”.
55. I know about the “morning after” pill.
56. I know my HIV status.
57. I know the name of the premier of KwaZulu-Natal.
58. I know where to get condoms for free.
59. I know where to get the contraceptive pill.
60. I often watch television late at night.
61. I use the internet almost every week.
62. I own a laptop computer
63. I own at least one cell phone.
64. Reading is a hobby for me.
65. I regret having had sex.
66. I sometimes drink alcohol socially.
67. I take vitamins almost everyday.
68. I think sex is ok in a committed relationship.
69. I am at risk for HIV.
70. I watch the news on TV at least 3 times a week.
71. I am careful with my diet.

UCT INFO

- UCT consists of two forms, form A and form B
- For medialab, Form A is an A form and Form B is a B Form.
- Form C is another A form and Form D is another B form
- So when calculating means, A can be subtracted from B
- C can be subtracted from D, vise versa depending on the method of calculation.

UCT TYPE I

Form A

Dataset 1

5. I am HIV positive.

Dataset 2

Dataset 3

18. I have been forced to have sex.

Dataset 4

Dataset 5

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

Dataset 6

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

Dataset 7

Dataset 8

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

Dataset 9

Dataset 10

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

Form B

Dataset 1

Dataset 2

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

Dataset 3

Dataset 4

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

Dataset 5

Dataset 6

Dataset 7

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

Dataset 8

Dataset 9

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

Dataset 10

Form C

Dataset 1

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

Dataset 2

Dataset 3

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

Dataset 4

Dataset 5

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

Dataset 6

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

Dataset 7

Dataset 8

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

Dataset 9

Dataset 10

46. I have raped someone.

Form D

Dataset 1

Dataset 2

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

Dataset 3

Dataset 4

48. I have refused to use a condom.

Dataset 5

Dataset 6

Dataset 7

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

Dataset 8

Dataset 9

65. I regret having had sex.

Dataset 10

UCT TYPE II

Form A

Dataset 1

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

Dataset 2

Dataset 3

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

Dataset 4

Dataset 5

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

Dataset 6

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

Dataset 7

Dataset 8

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

Dataset 9

Dataset 10

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

Form B

Dataset 1

Dataset 2

18. I have been forced to have sex.

Dataset 3

Dataset 4

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

Dataset 5

Dataset 6

Dataset 7

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

Dataset 8

Dataset 9

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

Dataset 10

Form C

Dataset 1

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

Dataset 2

Dataset 3

46. I have raped someone.

Dataset 4

Dataset 5

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

Dataset 6

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

Dataset 7

Dataset 8

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

Dataset 9

Dataset 10

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

Form D

Dataset 1

Dataset 2

65. I regret having had sex.

Dataset 3

Dataset 4

5. I am HIV positive.

Dataset 5

Dataset 6

Dataset 7

48. I have refused to use a condom.

Dataset 8

Dataset 9

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

Dataset 10

Appendix Ten

Ethics Approval from SSHREC

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

23 August 2013

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

Protocol reference number: HSS/0837/013CA

Full Approval Notification-Amendment

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

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

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

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

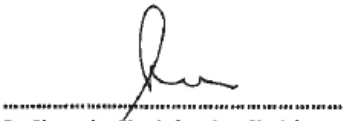
4. Ref: HSS/0837/013CA, Ms Chanél Visser 209509180, School of Applied Human Sciences – Psychology.
Project title: Students' rates of disclosure on sensitive sexual behaviours: A comparative study using methods of the Unmatched Count Technique 1 (UCT 1), Unmatched Count Technique 2 (UCT 2) and Self-Report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

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form; Title of the Project, Location of the Study must be reviewed and approved through an amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the discipline/department for a period of 5 years.

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

Best wishes for the successful completion of your research protocol.

Yours faithfully



Dr Shenuka Singh (Acting Chair)

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

Appendix Eleven

Gatekeeper Permission

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

6 August 2013

Ms Chanél Visser
School of Applied Human Sciences
College of Humanities
Pietermaritzburg Campus
UKZN
Email: 209509180@stu.ukzn.ac.za

Dear Ms Visser

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal towards your postgraduate studies, provided Ethical clearance has been obtained. We note the title of your research project is:

"Students' rates of disclosure on sensitive sexual behaviours: A comparative study using methods of the Unmatched Count Technique 1 (UCT 1), Unmatched Count Technique (UCT 2) and Self-Report Questionnaires (SRQ).

It is noted that you will be constituting your sample by randomly handing out questionnaires to students on the Pietermaritzburg Campus.

Data collected must be treated with due confidentiality and anonymity.

Yours sincerely

Professor J J Meyerowitz
REGISTRAR