

**Efficacy of the Informal Confidential Voting
Interview in Enhancing Self-Disclosure and
Reducing Social Desirability Bias:
A Comparative Analysis with the SAQ and FTFI**

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**Unless specifically indicated to the contrary, this thesis is a result of
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Abstract

Background and Objectives

Self-report data is known to be unreliable and susceptible to factors such as social desirability bias. Methods used for collecting self-report data has thus far been unsuccessful in ameliorating known obstacles to honest self-disclosure. Considering the current HIV/AIDS pandemic and related health crises, it is imperative that self-report data is an accurate depiction of reality, since it informs research requirements and designs as well as intervention designs and the evaluation of the efficacy of the interventions.

Aim

To evaluate and compare the efficacy of the Informal Confidential Voting Interview (ICVI) to the FTFI (Face-to-Face Interview) and the SAQ (Self-Administered Questionnaire) in enhancing self-disclosure and minimizing social desirability bias on sensitive topics of sexual experience and sexual activity.

Study Design

A sample of 110 undergraduate and post-graduate students at various tertiary education institutions in Pietermaritzburg were randomly allocated to the ICVI, the SAQ or the FTFI. The ICVI combined a face-to-face interview with a voting box method devised to enhance response anonymity. The FTFI and the SAQ were administered according to a standardized procedure to maximize confidentiality and self-disclosure.

Results

The self-disclosure scores were significantly higher for the ICVI in comparison to the FTFI and the SAQ, with a $p = 0.005$. Post-hoc tests revealed that the ICVI performed significantly better in self-disclosure scores than the FTFI with $p = 0.022$ and the SAQ with $p = 0.015$. There was no significant difference in self-disclosure scores between the SAQ and the FTFI. Using the Marlowe-Crowne scale of social desirability bias, a significant difference in social desirability bias scores were achieved with $p = 0.043$. However, the post-hoc analysis indicated no affirmative significant mean difference in social desirability score among any of the methods. Males displayed greater self-disclosure than females with $p = 0.013$, but for both sexes the ICVI group achieved the highest mean self-disclosure scores than the FTFI- and the SAQ group.

Conclusion

The results of this study concluded that the employment of ICVI fundamentally resulted in better quality data than the SAQ and the FTFI on topics of sensitivity and controversial behaviours. The findings are suggestive of the successful implementation of the ICVI method across potentially diverse research contexts that rely on self-report data, as the method is adaptable to the target population and its characteristics. Further research is warranted to build on its current design and facilitate the implementation of the ICVI across the wide disciplines of self-report data.

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Dedication

This thesis is dedicated to the late Dr. Bruce Faulds. Thank you Doc for your motivation and guidance.

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1. INTRODUCTION

Since it is the objective of any research study and data collection process to attain reliable data and arrive at valid conclusions, it is imperative for the tools of the study to maximize the probability of achieving this goal. In specific fields of research, behaviour is the source of concern and subsequently targeted for intervention, as in the context of the current global HIV/AIDS pandemic where South Africa is currently the worst affected country (UNAIDS, 2008).

Transmission and acquisition of HIV are primarily by behaviours labelled high risk, which constitute sexual contact or by the sharing of blood/blood products like in illegal drug use by injection. These high-risk activities are seen as very personal, highly sensitive and confidential and hence become inaccessible to observational research, leaving the only method of attaining such behavioural information to the self-report of the participant. However, since there is no direct way of verifying the respondent's answers, the reliability of the self-report method and the validity of the self-report are difficult to establish.

For the primary purposes of research to inform intervention, this poses a problem since the accuracy of the conclusions drawn from the data is directly related to the reliability of the self-report. Data and information attained by means of self-report from the respondent is notoriously unreliable, due to numerous factors such as social desirability bias. There is a multitude of contributing factors such as setting, timing, context and sensitivity of the questions posed that influence how participants decide to respond. The participant is fundamentally involved in an elaborate process of active decision-making, taking into account such above-mentioned factors in formulating a response.

In studies collecting data by means of self-report, it becomes apparent that the method used should facilitate the process of response formulation by the participant to arrive at the closest approximation to the truth, thus enhancing validity. Accordingly, for this type research to be useful, the contextual and personal barriers and threats to honest self-disclosure must be identified and addressed by a design of a self-report method that minimizes the participant's concerns in disclosing information whilst maximizing their willingness and ability to disclose openly. Gregson, Mushati, White, Mundandi and Nyamukupa (2004) found in favour of techniques that collect data in a more confidential manner than where participants' responses are known to the enumerator. The results of comparisons among survey methods that offer anonymity of response, such as the Self Administered Questionnaire (SAQ), and methods where this is not offered (for example the Face to Face Interview (FTFI) or telephone interviews) are mostly in favour of the SAQ (Aquilino, 1994; Cannell and Fowler, 1963; Catania, Gibson, Chipwood and Coates, 1990a; Catania, Gibson, Coates and Greenblatt, 1990b; Gregson, Zhuwau, Ndlovu, Nyamukapa, 2002; Tourangeau and Smith, 1996). This indicates an underlying trend in self-report that participants are more forthcoming in survey methods that provide a greater level of privacy. This well-known tendency in self-disclosure requires more research and the innovation of better techniques by which to supplement the survey methods available to the researcher.

It was the focus of this study to ascertain the efficacy of the ICVI in enhancing self-disclosure and reducing social desirability bias as compared to the SAQ and the FTFI on a sample of students enrolled at tertiary education institutions. The recency of the development of the ICVI lends itself to critical research to gauge its success as an innovative self-report method.

2. LITERATURE REVIEW

In Sub-Saharan Africa there is an estimated 22 million people living with HIV/AIDS, which accounts for approximately 67% of the global total of 33 million infections (UNAIDS, 2008). The UNAIDS (2008) further confirms that 75% of all AIDS-related deaths occur in this region. In South Africa, there is an estimated 5.7 million people infected with HIV, making it the largest epidemic in the world (UNAIDS, 2008).

Economic, structural, legal, social and personal factors are believed to have exacerbated conditions conducive to the rampant spread of HIV in the poorly developed countries of sub-Saharan Africa (Smit et al., 2005; UNAIDS, 2008). Vaccine trials, anti-retroviral therapy roll-out, and microbicide trials have been implemented and are currently testing and finding new strategies to curb the spread of the infection. However, it is known that HIV/AIDS is just as much a social epidemic deeply rooted in behavioural trends and beliefs that require an understanding of the motivations for engaging in high risk behaviours and aspects that govern behaviour change (Mawar, Sahay, Pandit and Mahajan, 2005).

There is a need to understand the social context wherein medical and behavioural interventions are implemented, and there is a call for more rigorous research and better research methods to illuminate the determinants of high-risk behaviours and behaviour modification interventions (Dare and Cleland, 1994; Smit et al., 2005; UNAIDS, 2008). The social milieu is of equal importance in judging the success of medical interventions since adherence, disclosure of status, and stigma have been recognized as pivotal factors in successful participation in trials and intervention models of HIV transmission (Dare and Cleland, 1994; Mawar et al., 2005). Considering that social and behavioural

information, especially on sensitive topics most often can only be collected by means of self-report and disclosure, the research of these behavioural factors and intervention impact assessments rely on a sound self-report method.

A multitude of survey and self-report techniques is available to the researcher whose data collection can only be done by means of participant self-disclosure. Whilst methods such as the self-administered questionnaire (SAQ) and the face-to-face interview (FTFI) have been utilized since the advent of human participation in research, all methods are not without problems inherent in their design as implemented. Researchers have no direct means of response verification, and instead have to accept the participants' answers as fact. Barbor, Steinberg, Anton and Del Boca (2000) have in fact shown that response verification by means of biochemical tests do not sufficiently add to self-report measurement accuracy as to justify their use. This was supported by Barriera-Viruet, Sobeih, Daraiseh and Salem (2006) in assessing the validity of the SAQ versus observational and direct measurement techniques.

However, as expected with human participation, there will be some degree of inaccuracy in self-report, whether it is intentional misconstruction of the truth or simply difficulty in recall. Unfortunately, this renders data collected by any self-report method vulnerable to validity and reliability concerns with regards to the actual construct that was intended to be measured.

Human participants are susceptible to a great many internal and external influences that inevitably distort objective reality from what is being measured by the self-report method. It is these influences that render self-report data as unreliable and frequently inaccurate thus compromising both base rate estimates of actual behaviour and intervention outcome evaluations (Bell, Montoya and Atkinson, 2000; Weinhardt,

Forsyth, Carey, Jaworski and Durant, 1998). Internal influences comprise the participant's own subjective experience of the self-report, with regards to their predisposition to self-disclosure and social desirability bias. However, this is also amplified by external influences that constitute interviewer effects, question threat and perceptions of confidentiality. These factors play an inadvertently crucial role in how participants respond and to what extent they provide truthful disclosure. Such factors represent response bias, where the participant reports inaccurate information which could either be unintentional (memory/recall problems) or intentional (wilfully distorting the truth or withholding for various reasons (Pienaar, 2003). Response bias constitutes a cognitive preconception where participants respond to questions based on how they think the interviewer would like them to respond, as opposed to responding truthfully (Bardwell and Dimsdale, 2001). The effects of intentional response bias in particular, are reported to become more pronounced on sensitive self-report topics such as sexual behaviour (Cannel and Fowler, 1963; Johnson and Delamater, 1976). It is these effects that serve as indicators of social desirability bias and self-disclosure that were the focal point of the current study in assessing the efficacy of the three methods of self-report in reducing social desirability bias and maximizing self-disclosure.

2.1 Interview Methods

It has been widely hypothesized and evidenced that self-report of illicit or stigmatized behaviour differ depending on self-report method employed. It has been illustrated that the extent of self-disclosure is significantly related to the level of privacy afforded by the data collection process (Newman, Jarlais, Turner, Gribble, Cooley and Paone, 2002). Aquilino (1994) explains that all methods of self-report are susceptible to social

desirability bias, although it has been established by prior research that some methods intensify response bias more than others. Response bias pertains to unintentional non-disclosure typically attributed to recall error, and intentional response bias, where a multitude of possible causes are active efforts towards non-disclosure. These are discussed in more detail in section 2.2 below.

Confidentiality and anonymity are two principal concerns that shape participant responses in self-disclosure. Aquilino (1994) asserts that these two factors are mediated by the social distance offered by a self-report method, where a greater distance between the interviewer and respondent ameliorate these concerns of self-disclosure, hence the extent of the self-report method effects would fluctuate depending on this social distance and how much the method can alleviate the participant's concerns.

It has been shown that method effects are inconsequential on topics of neutrality and low emotional loading, but those effects intrinsic in method design become more influential in response bias on topics of greater sensitivity and of a personal nature (Anderson and Broffitt, 1988; Aquilino, 1994; Gribble, Miller, Rogers and Turner, 1999; Herman, 1977; Tourangeau and Smith, 1996). This could be attributed to the respondent's overriding concerns of confidentiality and anonymity. Since various methods of self-report present differing degrees of privacy and anonymity as a result of the social distance they offer, it is argued that the extent of intentional response bias by virtue of low self-disclosure and interviewer effects are substantially influenced by the design of particular self-report method employed (Coates et al., 1986; Gribble et al., 1999; Pienaar, 2003) In addition to the elements of confidentiality and anonymity, the concept of credibility is of importance in how participants gauge the context of self-disclosure. Credibility comprises a subjective perception of trustworthiness and expertise

of the individual on the topic at hand (Aquilino, 1994). Aquilino (1994) explained that the respondent's perception of credibility of the interviewer, self-report method and the topic under investigation further shapes the way the participant would respond in a self-report context. It is hence claimed that the less credible a researcher or interviewer is perceived to be by the respondent, the less disclosing they will be in their responses.

The self-administered questionnaires (SAQ) have long been favoured as a cost-effective method for self-report data collection, especially on sensitive topics. With this method, large sample sizes are feasible and since participants perceive this method to be more anonymous, it has been widely documented that it yields better quality data (Redline, Dillman, Carley-Baxter and Creecy, 1998; Durant and Carey, 2000). However, this method of survey is greatly dependant on literacy of the target population, and substantial control over the data collection process is dependant on the participants themselves. They are solely responsible for the comprehension of the questions, the administration, and the submission of responses (Redline et al., 1998). In addition, there is no guarantee that the respondent was the intended participant of the sample (Jenkins and Dillman, 2008; Redline et al., 1998). Redline et al. (1998) asserts that SAQ's become very problematic and are prone to item-non response when the questionnaires are complex with branching patterns and skip-logic to be followed. What further adds to the quandary of self-administration is the comprehension and intent of meaning as designed by the researcher, but not necessarily achieved by the respondent. So the researcher may have intended an item to question one level of activity, but the respondent understood the meaning as something other than this intention. Consequently the data collected may prove invalid in such instances.

It has been the goal for all researchers who rely on self-report data to minimize the effects or occurrences of response bias, and maximize honest self-disclosure. Response bias most frequently takes the form of social desirability bias, whether impression management or self-deception (Aquilino and Lo Sciuto, 1990; Ashley and Holtgraves, 2003; Catania et al., 1990b).

Studies by Aquilino and Lo Sciuto (1990) and Jourard and Lasakow (1958) found that use of the SAQ diminished the effects of social desirability bias, arguably due to the absence of an interviewer and hence providing more anonymity in response. These results have been supported by findings from numerous studies including Catania et al., (1990a), Durant and Carey (2000), Gribble et al., (1999) and Metzger et al., (2000); Testa, Livingston and VanZile-Tamsen (2005). However, what the SAQ is lacking is the assurances of confidentiality and credibility assessment made possible by methods where there is an interviewer present, such as the FTFI. With the SAQ, the participant has no direct means to ascertain the researcher's credentials, intentions or veracity to facilitate credibility assessment (Catania et al., (1990a). So although the SAQ offers response anonymity, it may be concerning to respondents as to who will have access to their responses and exactly how confidential the process is, if anonymity should be compromised especially on topics of a very private nature. These respondents have no means of gauging credibility of the research or the researcher, and may be prone to respond conservatively in such situations of uncertainty. In large scale research studies, the participants hardly ever have the ability to meet the Principal Investigator(s) and mostly only deal with the research team assigned to collect the data. Members of the research team may not appear as knowledgeable or trustworthy as the PI(s), or behave in a manner conducive to perceptions of good repute, thus undermining credibility of the

study itself. This, along with lack of understanding or knowledge of the use of their responses could influence participants' self-report trends, and could then ultimately destabilize data trends associated with the efficacy of the intervention. In clinical trials such as HIV vaccine studies or the use of microbicide gel, the measurement of the success of the intervention relies on analysis of self-reported use of the product. Anecdotal evidence from this researcher's experience in trial site management has shown that participants' comfort with self-disclosure, their perceptions of credibility and usefulness of their honest response have a significant impact on the reliability of the data and consequently the final outcome of the trial. However, this warrants further research. Several studies have documented problems associated with unreliable self-report, and questioned the use of several self-report techniques such as the FTFI in clinical settings (Aquilino and Lo Sciuto, 1990; Catania, et al., 1992; Catania et al., 1990a; Jagannathan, 2001; Reinisch, Sanders and Ziemba-Davis, 1988; Smit et al., 2005; Suchman and Jordan, 1990).

The face to face interview is more often employed in situations where the target population is illiterate or the topic under investigation requires greater depth in probing of respondents (Durant and Carey, 2002; Gregson et. al, 2002; Smit et al., 2005). Cano (2008) explains that where the data collection process is complex in questionnaire design, the FTFI is typically the most useful tool, and circumvents item non-response. Another benefit of this method is that the meaning of items can be clarified by the interviewer, therefore ensuring that the intent of the question is understood by the participant, allowing greater congruency between question and response. Unfortunately there is some contention on the efficacy of the method in implementation versus its design objective. Suchman and Jordan (1990) make a pertinent argument with regards to the

implementation of the FTFI and its shortfalls. They claim that since the FTFI is used as a data collection instrument, the “conversational” element of this method becomes constrained under its purpose. Seeing as the interviewer is aiming to follow the research agenda, the norms of interaction under a given topic is violated, sometimes manifesting as “jagged” question-answer sessions very poorly masquerading as a comfortable conversation between two people. What further compounds the superficiality of the FTFI is that the agenda was prepared by a third party trying to control how topics are talked about. The major pitfall they identify with the typical approach to the FTFI, is the researcher’s attempts at standardization – in what they argue as taken as sameness of words to be mistaken as stability of meaning. Suchman and Jordan (1990) observe that the results of participants realizing that their expectations of the ensuing “conversation” norms are being violated, they could react with boredom and impatience, perhaps undermining the data collection process as a whole.

The FTFI requires rigorous training of all interviewers to ensure that the correct meanings of the items are conveyed to participants, in the interests of standardization (Cano, 2008; Gregson et al., 2002). This is to ensure that participants do not respond to items based on their subjective interpretation of the questions, which will vary across the range of respondents, reducing comparability and diminishing data validity. There is however no definitive way of measuring this attempted standardization in practice. As a consequence of required training, the need for typical lengthy interview time for introductions and debriefings, as well as the aim to adopt conversational approaches to data collection, the FTFI is criticized as a labour-intensive method (Catania et. al., 1990a; Catania et al., 1990b; Schwarz, Strack, Hippler and Bishop, 1991).

With regards to social desirability bias and self-disclosure in the administration of the FTFI, there exists a great wealth of research on its performance as a self-report method with specific focus on these two facets. As previously qualified, confidentiality and anonymity of response are central to the concepts of social desirability bias and self-disclosure, that affects respondent candour and perceived need for editing their disclosure. The design of the FTFI precludes response or participant anonymity, but has the advantage of the interviewer who can reinforce assurances of confidentiality and directly address any pertinent concerns the participant may have with regards to participation (Aquilino and Lo Sciuto, 1990; Catania et al., 1990a). The FTFI also provides the participant with the ability to assess credibility both of the interviewer, and of the research (Aquilino and Lo Scuito, 1990). A participant would arguably be very hesitant to disclose personal information to another person they gauge to be less than qualified or professional in their conduct.

It has been hypothesized by many studies and evidenced by numerous results that the method that enhances respondent anonymity would be better placed at increasing self-disclosure and to some extent mediate social desirability bias in terms of impression management (Catania et al., 1990b; Gribble et al., 1999; Jagganathan, 2001; Metzger et al., 2000; Schwarz et al., 1991; Zenilman, et al., 1995). Weinhardt et al. (1998) argued that the SAQ and its derivatives like the Computer Administered Questionnaire (CAQ) provides benefits of response (and to some extent respondent) anonymity and subsequent confidentiality due to limited (if any) interpersonal contact with an interviewer, which aid higher self-disclosure than in the FTFI since these facets are lacking in this method. Additionally, it is the presence of potential interviewer effects that provides the incentive for response bias in self-report. Aquilino's (1994) survey of drug and alcohol use

revealed greater response candour in the SAQ than in the FTFI. The audio computer assisted self-interview (ACASI) is another method that is considered a progressive development of the SAQ for semi-literate participants (Ghanem, Hutton, Zenilman, Zimba and Erbelding, 2004; Gribble et al., 1999; Mertzger et al., 2000; Newman et al., 2002; Smit et al., 2005 and Tourangeau and Smith, 1996). This method shares all the advantages and disadvantages of the original SAQ, but adds the benefit of verbal explanation of the questionnaire to enable response. Ghanem et al. (2004) and Metzger et al., (2000) found that the ACASI yielded greater self-disclosure than the FTFI among STI clinic patients. Ghanem et al. (2004) conducted a study on participants attending an STI clinic who took a risk behaviour assessment via an ACASI followed by an FTFI. They claimed that the FTFI were more prone to social desirability bias according to their analysis. Aquilino and Lo Scuito (1990), Cano (2008), Catania et al. (1990b), Catania McDermott and Pollack (1986), Gribble et al. (1999), and Weinhardt et al. (1998) found in favour of the SAQ versus the FTFI in measurement of self-disclosure. These results are testimony that self-administration facilitates self-disclosure, and can be attributed to the level of privacy and anonymity provided to the participant that is unmatched by the FTFI. It can also be argued that the absence of an interviewer excludes potential interviewer effects that could encourage socially desirable response bias by means of impression management. This would result in participants editing their responses that unquestionably would reduce their self-disclosure on topics of private or illicit behaviour. Moreover, participant discomfort with disclosure may be compounded by confidentiality concerns in the FTFI, specifically pertaining to future identification by the interviewer since there is an increased level of contact between the interviewer and participant in this method of self-report (Aquilino and Lo Scuito, 1990; Catania et al., 1990a; Gregson et

al., 2004; Gribble et al., 1999; Jagannathan, 2001; Jourard and Lasakow, 1958; Mensch and Kandel, 1988). However, there are a multitude of factors that contribute to and influence self-disclosure and reliable self-report.

2.2 Factors affecting self-report

2.2.1 Unintentional response bias

Unintentional inaccuracy of self-disclosure is a response bias whose mechanisms fall beyond the immediate conscious intent of the participant to distort their answers. This is primarily a result of either cognitive error due to memory effects or repression as a form of impression management or self-deception.

Burton and Blair (1991) claimed that cognitive accuracy in recall is heavily dependent on the relative accessibility of the memory. This is influenced by the recency, frequency and idiosyncrasy of the event. Unfortunately, memory recall is susceptible to transference and interference effects, as well as influenced by method of self-report. So despite the participant's best intentions toward honest self-report, their responses may be immeasurably unreliable as a result of these inherent cognitive obstacles. Bradburn, Rips and Shevell, (1987) and Hasher and Zacks (1984) contend that memory failure is more common for activities based on behavioural events or sensitive and personal behaviours. Typically self-report surveys are orientated toward such specific lines of temporal and spatial questioning asking "How many times in the last three months..." and "How often...".

Faced with the complex task of recalling specific events, the participant may integrate similar experiences or report based on their individual habitual behaviour, to the detriment of specificity and detail often sought by behavioural research (Bradburn et al.,

1987). In addition, it has been hypothesized that participants would use the recall strategy that minimizes recall time and memory effort, resulting in estimations rather than precision (Bradburn et al., 1987; Hasher and Zacks, 1984; Tversky and Khaneman, 1974). This may lead to a substantial proportion of survey data being based on behavioural estimates, which may not serve the purpose of tracking the actual transmission of HIV or the success of intervention strategies. Downey, Ryan, Roffman, and Kulich, (1995) found that unique activities seemed to enjoy a better rate of accurate recall than everyday activities, but that this recall rate diminished with the increase in number of sexual partners. To further compound cognitive logistics, Wright (1974) warned that the mere operationalization of survey research, places more emphasis on the participant in terms of context, pressure of response and contextual distractions that may diminish recall accuracy. In survey research the participant is placed outside his/her comfort area and asked all kinds of questions, where s/he is pressured to respond quickly and accurately. There are likely to be quite a few distractions and all of these aspects could reduce his/her accuracy in remembering events.

In a study of repression and memory, Ashley and Holtgraves (2003) and McKinnon et al. (1993) found that anxiety and self-deception had a significant impact on memory. Self-deception was characterized as a form of non-conscious and non-deliberate socially desirable response set as a result of repression. Their findings suggest that negative emotional or behavioural experiences are repressed and formulate the act of self-deception rather than impression management. This is of importance if one is aiming to collect self-report data on sensitive behavioural events that may include topics of forced sexual intercourse, date-rape or constructs that are not congruent with an individual's self-concept. Here social desirability bias is a result of internal conflict often

beyond the awareness of the participant, but with the same result of response inaccuracy (Herold and Way, 1988; Mosher and Cross, 1971).

Unintentional response bias is an ever-present factor in any activity requiring self-report, but it is virtually the only aspect of self-report that does not lend itself favourably to intervention or attempts to measure or correct its effects, since its roots are psychological and cognitive constructs more often beyond the control of external manipulations.

2.2.2 Intentional Response Bias

Conscious and active misrepresentations of self-report are considered intentional response bias, since the respondent is cognizant of the act and wilfully distorts the truth for a particular reason. It is broadly documented that people are susceptible to concerns of judgment and perceptions of character by others, and subsequently report in a manner conducive to outcomes of favourable assessment (Catania et al., 1990a; 1986; Gribble et al., 1999). This observable fact is identified as social desirability bias, whereby respondents “market” themselves to others, by underreporting of socially undesirable behaviours (or illicit or private activities) and overreporting of socially desirable behaviours (Catania et al., 1990a; 1986; Gribble et al., 1999; Jourard and Lasakow, 1958; Lindegger and Richter, 2000; Mensch and Kandel, 1988).

The effects of social desirability bias are detrimental to all research ventures, skewing results and providing inaccurate synopses of topics that are eligible for interventions. If social desirability bias goes unchecked, the outcome interventions may ill-fit the initial problem identified for research. Sources of social desirability bias arise from contextual needs of the participant, where they feel compelled to manipulate the

truth. All methods of self-report are vulnerable to social desirability bias, however some alleviate the needs and concerns of participants that lead to intentional response bias, hence diminishing the effects of social desirability bias. In the context of survey self-report, the influences most commonly responsible for these response manipulations are attributed to several factors that are discussed below.

2.2.2.1 Socially Normative Behaviour

Local society, culture and religion defines what is considered desirable or undesirable behaviour, and self-report would be reflective of the individuals perceived societal norms (MacPhail and Campbell, 2001; Smit et al., 2005). The need for conformity to the majority is the cause for much response bias, as the respondent wishes to meet the local norms and avoid ridicule or embarrassment from deviation from his or her society or culture (MacPhail and Campbell, 2001; Hansen and Schuldt, 1982; Smit et al., 2005; Zenilman et al., 1995). Subsequently, there would be some degree of systematic bias toward overreporting of desirable behaviours and underreporting of socially proscribed behaviour (Bradburn, Sudman, Blair and Stocking, 1978; Catania et al., 1990b; Knudsen, Pope and Irish, 1967; Zenilman et al., 1995). Musoke (1991) illustrated the importance and influence that social authorities like religion and the church has in countries with significantly high HIV prevalence like Uganda. Despite a government supported campaign encouraging the use of condoms, the religious leaders condemned the practice of safe sex as it may encourage high levels of promiscuity by the youth. Undoubtedly this could cause response bias in favour of non-condom use. MacPhail and Campbell (2001) ran focus groups involving 44 Black South African participants from the township of Khutsong to gain a better understanding of how sexuality is a social phenomenon

governed by peer pressure. They found clear evidence that prevailing social norms not only constitute high-risk behaviour for HIV transmission, but that the youth are well aware that these activities that are socially governed in their community place their lives at great risk.

In the current social milieu, educational interventions are widely used in combating the HIV/AIDS pandemic, with great emphasis on safer sex and fewer sexual partners in preventing the spread of the virus. Faced with questions on sexual activity, participants may feel pressured to respond in accordance with these messages and intervention strategies by untruthfully overreporting condom use and few casual partners (Catania, 1999; Catania et al., 1992; 1990b; Coates et al., 1986; Reinisch, Sanders and Davis, 1988; Zenilman et al., 1995). With such manipulations, participants aim to avoid potential embarrassment and contempt from revelation of socially sanctioned behaviour (Aquilino and Lo Sciuto, 1990; Catania, Binson, Canchola, Pollack, Hauck and Coates, 1996; Catania et al., 1990b; MacPhail and Campbell, 2001; Mensch and Kandel, 1988).

Bradburn et al. (1978) claimed that the items that most often result in response bias are those that arouse anxiety in questioning illicit or very private activities such as sexual intercourse, or activities that are contra-normative. However, societal standards differ and should be assessed for what constitutes normative practice before any inferences are made regarding response bias (Blair and Piccinino, 2004; Foxcroft and Roodt, 2001). For example, traditional African customs accept multiple marital partners whereas in Western cultures this practice is illegal.

Pertaining to the current study, response bias caused by socially normative conformity would be considered as overreporting of condom use and safe sex practices

and underreporting of casual sex partners and sexual activity as these are regarded as desirable behavioural patterns in the context of the current HIV/AIDS pandemic.

2.2.2.2 Influence of gender and culture on social desirability bias

Gender bias is extensively reported on studies involving self-report. Catania et al. (1996;1990b), Dindia and Allen, (1992), Hansen and Schuldt, (1982), Knudsen et al. (1967), Tourangeau and Smith (1996), Zenilman et. al (1995) all found in favour of an overreporting trend for male participants and an underreporting response trend for female participants on items of sexual content. Catania et al. (1996) argued that the degree of response bias is associated with the sensitivity of the question content, where neutral items elicit similar response patterns from both sexes, but more personal questions on sexual behaviour resulted in a divergent pattern of response bias between the males and females. They claim that there exists a sexual double standard in society that facilitates the perception that sex is permissible for men but not for women. As previously discussed, there is a need for conformity to these social standards, which could perhaps explain the overt differences in response trends between the sexes. By use of The Sex Inventory (Thorne, 1996), Galbraith, Strauss, Jordon-Viola and Cross (1974) illustrated a high level of agreement (with a correlation of 0.90) between males' and females' ratings of what constitutes social desirability in sexual behaviour. Larson (2002) found that females seemed to be more influenced by social standards and the desire to conform to these than males.

Overreporting of sexual experience by men are made in attempts to substantiate their sexual prowess (which is congruent with social standards), whilst women

underreport their sexual experience to avoid perceptions of promiscuity, which is socially undesirable (Catania et al. (1996).

The cultural contexts of the participant are very influential in self-disclosure. Various cultures may frown upon high levels of self-disclosure to strangers whom are conducting the research, especially on topics of sexual activity and in close-knit communities. Foxcroft and Roodt (2001) explain that gatekeepers to communities could discourage participation by their community members, which may affect the response sets by those who choose to participate. Western cultures are more liberal in their participation, whereas traditional cultures have strict adherence to their leaders and their instructions. This becomes an influential facet in self-report if research requires the examination of various cultural sexual activities, such as male circumcision, if community members are strongly governed by their leaders' discouragement of participation or stigmatization if a member refuses to adhere to these messages.

Bardwell and Dimsdale (2001) found that Black respondents displayed significantly higher levels of social desirability bias as measured by the Marlowe-Crowne scale, and warned that these underlying ethnic group differences could adversely affect interpretation of disease epidemiology.

In addition, the culture of the participant has an enormous impact on how responses would be formulated, since much of the participant's assimilation of the research context and question content is dependant on their cultural development and experience of similar paradigms, which is often lacking in rural settings of traditional cultures (Blair and Piccinino, 2004; Foxcroft and Roodt, 2001).

2.2.2.3 *Question threat*

Self-report utilizes questionnaires as the tools of data collection, with each of the items serving as a data point for the researcher. Questionnaire design comprises item wording, item purpose, directness, ambiguity, sensitivity and sequence, each of which influences the response set in the self-report milieu. Participants are very sensitive to the phrasing of items and their purpose, and may show a tendency for response bias if they feel that certain questions are irrelevant or too threatening (Aquilino and Lo Scuito, 1990; Bradburn et al., 1978; Catania, 1999; Catania et al., 1996; Jagannathan, 2001; Mensch and Kandel, 1988; Tourangeau and Smith, 1996). Question threat is a subjective perception, and is dependant on the context of self-report as well as the target population of respondents. Sex workers may not be threatened by items enquiring their anal sex experience whereas first year students may take offence to such items. It is imperative that questionnaires are designed with attention to the phrasing of questions, their relevance and coherence, with the goal of satisfying the research question whilst being tailored to the audience. The aim of questionnaires is to reduce the gap between the truthful information required by the researcher and the actual information obtained from the participant.

Question threat alludes to the feelings of anxiety, apprehension and unease that are experienced by participants if they fear the consequences of truthful disclosure thereto (Tourangeau and Smith, 1996). Numerous studies have reported that question threat resulted in response bias, and that it was a directly proportional relationship with greater threat perception leading to significantly reduced self-disclosure (Aquilino and LoSciuto, 1990; Bradburn et al., 1978; Catania et al., 1996; Gregson et al., 2002; Jagannathan, 2001; Tourangeau and Smith, 1996).

Topics of sexual experience are commonly established as sensitive and personal, and may suffer from a higher rate of question threat than other topics. Catania et al., 1996 explains that item wording becomes critical with such sensitive topics, since it may communicate to the respondent the social norms to conform to or elements of judgment. This may pressurize the respondent to distort their answers accordingly. Interestingly; Aquilino and LoSciuto (1990) contend that perceived question threat renders respondents more receptive to contextual factors such as interviewer effects and concerns of discrimination, which could lead to response bias. This highlights the interplay between the factors that govern self-disclosure and how each contributes to the participant's perception of self-report and their concerns of social popularity.

2.2.2.4 Sexual Experience

Constructs such as self-esteem, sexual guilt and sexual experience seem to be organized facets in self-disclosure. It has been argued that respondents that display healthy self-esteem levels as measured by psychological assessment tools, engaged in higher levels of self-disclosure, possibly due to less feelings of guilt and greater sexual experience (Byers and Demmons, 1999; Harold and Way, 1988). Not surprisingly, Mosher and Cross (1971) illustrated that participants that score highly on measures of sexual guilt, were also found to be less sexually experienced and less disclosing. This has implications for target sample selection, since data derived from a sample of sexually inexperienced participants may be confounded by their sexual guilt that could reduce self-disclosure to significant limitations. One has to be cognizant of the sample characteristics with regards to the topic under question, as it is illustrated here that sexual experience has an impact on self-disclosure of sexual activity, which is mediated by the respondent's self-esteem. It could

of course also be contended that higher self-esteem is associated with sexual experience, which leads to good self-disclosure since there is less feelings of sexual guilt.

In addition to sexual experience, behaviours are typically not reported if these are not congruent with the participant's self-concept or if the frequency of that behaviour is very low (Bradburn et al., 1978; Catania et al., 1990b; Downey et al., 1995). For example, a respondent whom have had anal sex on two occasions in 10 years of sexual experience, would not typically disclose anal intercourse. Recall error is also at play for behaviours with low frequency and behaviours that are not compatible with the participant's self-concept, since recall is argued to be dependant on assimilation of typical behavioural patterns (Bradburn et al., 1978).

2.2.2.5 Interviewer Effects

Interviewer characteristics have a well-documented influence on participant's responses in survey modalities. Much of this influence is greatly dependant on the type of interview method, which governs the amount of privacy afforded and the social distance between the interviewer and respondent. However subtle interviewer effects may be, these give rise to the need for deception as a result of social desirability bias. Social desirability bias is expected to be much more pronounced in self-report methods where the interviewer is physically present, such as the FTFI, as opposed to a telephonic or postal questionnaire (Aquilino, 1994; Aquilino and Lo Scuito, 1990; Cannell and Fowler, 1963; Catania, 1999; Catania et al., 1986; 1990 and 1996; Durant and Carey, 2000; Gribble et al., 1999; Tourangeau and Smith, 1996). This is obviously due to the interviewer's approvals, attitude and preferences that may be communicated, even

nonverbally, to the respondent that will alter their response set (Johnson and Delamater, 1976; Schwartz et al., 1991).

Physical characteristics of the interviewer has been claimed to manipulate response sets by virtue of stereotypical assimilation of these characteristics such as age, race and gender, by the participant to known individuals who share similar features. In support of this postulation, Gregson et al. (2002) found that self-disclosure of racist behaviour was markedly reduced when the participant and the interviewer differed in ethnicity, but it was more forthcoming from the participant if they shared the same race group as the interviewer. Aquilino (1994) found that younger participants underreported on sexual behaviours when interviewed by older individuals, but that this trend was reversed when interviewed by same-age interviewers. He speculated that perhaps older interviewers represented a parental figure to the participants, and that it is typically the elders of a community that had set the societal standards by which to conform.

In the study by Catania et al. (1996) comprising 2030 participants of the local community they illustrated that participants were more disclosing when afforded the opportunity to select their target person, giving them a greater sense of control over their disclosure context. Interestingly, they found that both men and women choose female interviewers.

Findings provide support for the conception that self-disclosure is enhanced when the participant and the interviewer share similar characteristics. It can be said that there exists a gradient of influence that is dependant on the deviation of characteristics, where the influence on the response set would be greater the more different the features are between the participant and the interviewer, resulting in social desirability bias.

Interviewer comfort on the topic is not often considered in recruitment of interviewers or in the data collection process. The concern mostly lies with the comfort of the participant, but Herold and Way (1988) it has shown that inexperienced interviewers on sensitive topics negatively affect self-disclosure. They provided confirmation that sexual comfort and similarity of sexual attitude by the interviewer resulted in enhanced disclosure than interviewers whom were themselves uncomfortable with the topic. Jonhson and Delamater (1976) discovered this occurrence for themselves when they analysed the high interviewer turnover as a result of interviewers' discontent with the topic. Interviewer discomfort could greatly bias a respondent and cause exaggerated social desirability bias.

It has long been held that the presence of an interviewer is beneficial to self-report since they can provide continual reassurance of confidentiality as well as clarification of questions and building positive rapport with the participant so as to enhance self-disclosure (Aquilino, 1994; Aquilino and Lo Scuito, 1990; Hansen and Schuldt, 1982; Mensch and Kandel, 1988; Tourangeau and Smith, 1996). However, Mensch and Kandel (1988) found that as familiarity between the interviewer and participants increased with more interviews, the level of disclosure of illicit drug use decreased. Aquilino (1994), Gregson et al. (2004) and Jourard and Lasakow (1958) similarly evidenced that greater familiarity reduced self-disclosure by increased social desirability bias. It was considered that perhaps the concerns of future encounters with the interviewer and more pronounced differences in social standards were responsible for this phenomenon (Gregson et al., 2004; Mensch and Kandel, 1988). Although not widely documented, this could be a potential reason for reports of greater compliance and adherence to protocol interventions by participants in longitudinal cohorts in clinical trials.

2.2.2.6 *Self-disclosure as an indicator of social desirability bias*

Self-disclosure is defined as the level of honest self-report in a communicative setting (Jourard and Lasakow, 1958). However, self-disclosure on various topics has different consequences, dependent on the privacy and socially normative baselines embodied. For example, topics of sexual experience are far more sensitive to elements of privacy and embarrassment than talking about preferences of clothing. Based on the Social Exchange Theory that argues that individuals will be more participative in acts that are rewarding but avoid costly participation, Herold and Way (1988) contend that self-disclosure will occur when the consequences are satisfying, but will be reduced when consequences are potentially unfavourable.

The degree of self-disclosure is dependant on the perceived level of confidentiality and probability of embarrassment or negative consequence, which subsequently could allude to the presence of social desirability bias in self-report.

Participants will not be disclosing on sexual experiences if they perceive a risk of negative judgment or potential embarrassment, which is congruent with the act of social desirability bias since they are marketing themselves more favourably in the face of perceived detriment due to honest self-report (Aquilino, 1994; Catania, 1999, Catania et al., 1996; 1990a; 1990b; Gribble et al., 1990; Lindegger and Richter, 2000; Testa et al., 2005; Weinhardt et al., 1998).

Based on the observations that participants tend to be less disclosing on sensitive topics, which is typically considered to be as a result of social desirability bias (Aquilino and Lo Sciuto, 1990; Catania et al., 1996; 1990b; Chavkin, 2001; Jaggannathan, 2001; Latkin and Vlahov, 1998; Testa, Livingston and VanZile-Tamsen, 2005; Weinhardt et al.,

1998), it can be claimed that the greater the tendency or susceptibility of the participant to social desirability bias, the less disclosing the participant will be on sensitive topics such as sexual experience. This theory is inclusive of overreporting and underreporting, since these are active acts to appear more favourably to the target person.

It is noteworthy to mention that a certain amount of caution must be observed in assessment of responses to indicate self-disclosure, since practices of exaggeration does not constitute truth or deem greater self-disclosure, and unfortunately data collection by any means of self-report does not lend itself to precise depiction of truth. However, with a large enough sample size representative of the norm; it is probable that response sets would regress to the norm, thus reducing the effects of exaggeration-induced outliers. The same argument holds for under-reporting and its effects on the subsequent analyses and interpretation of data.

2.3 Current Study

The present study aimed to evaluate the efficacy of enhancing self-disclosure among the FTFI, the SAQ and the Informal Confidential Voting Interview (ICVI). The ICVI is a combination of the SAQ and the FTFI, and originated from the Pocket Chart Voting technique (Gregson et al., 2002). It has the combined benefits of the FTFI and the SAQ, in having an enumerator present yet providing anonymity of response since the enumerator does not see the respondent's answers, which are "voted" into the voting box. The current study was founded on the longitudinal study by Gregson et al. (2002) on the efficacy of the ICVI method in comparison to the FTFI in reducing social desirability bias in rural Zimbabwe where illiteracy was a factor. The method was tested on the topic of sexual experience in communities well known for their aversion against female

promiscuity, so as to provide a clearer indication of the ICVI performance in self-disclosure on contra-normative behaviour. Gregson et al. (2002) found that both males and females had a significant tendency to disclose multiple casual partners in the ICVI as opposed to the FTFI. Their findings were in support of a reduction in social desirability bias in methods that afforded greater privacy in disclosure, and were attributed to the ICVI's ability in enhancing anonymity and confidentiality that was not an advantage of the FTFI. However, on their second round of the survey the degree of enhanced reporting was diminished and they claimed that the response error in the ICVI had increased. Despite these observations, they maintained that the ICVI had shown a favourable response rate over the FTFI in reporting HIV associated high risk behaviours (Gregson, Mushati, White, Mlilo, Mundandi and Nyamukapa, 2004).

Previous research and their findings as previously discussed highlight the need for critical research to ascertain or facilitate the development of a self-report method that could address the shortfalls of the current strategies that exist. The pivotal role of socio-behavioural factors situated within HIV vaccine trials, treatment programmes and behavioural interventions has underscored the need for accurate and reliable self-report data (Catania et al., 1990a; Chavkin, 2001; Smit et al., 2005; Weinhardt et al., 1995; Zenilman et al., 1998)

Although the various self-report methods have their advantages and specialized contexts of implementation success, there are differences (as discussed in section 2.1) that could delineate the potential disadvantages that would result in social desirability bias and ultimately reduce self-disclosure and provide inaccurate self-report data. It was the objective of this study to establish the efficacy of the ICVI in comparison to the SAQ and the FTFI in reducing social desirability bias and enhancing self-disclosure on

sensitive topics of sexual activity and sexual experience, as measured by increased self-report of sexual behaviour.

3. METHODOLOGY

3.1 Aim

This study aimed to evaluate the efficacy of the ICVI in comparison to the FTFI and the SAQ in ability to increase self-disclosure and minimize social desirability bias on sensitive topics of sexual experience and activity. The premise is that methods that promote higher levels of confidentiality but enable engagement in the interviewer relationship are hypothesized to generate lower social desirability bias and higher levels of self-disclosure. It was postulated that the self-report method that supposedly maximizes respondent confidentiality and anonymity whilst minimizing respondent disclosure concerns and discomfort would enhance self-disclosure and reduce social desirability bias. In accordance with these characteristics, it was hypothesized that respondents' reporting via the ICVI would display greater levels of self-disclosure and achieve lower scores on the Marlowe-Crowne scale of social desirability bias, than respondents reporting by use of the SAQ and the FTFI respectively.

3.2 Rationale

Global concerns about the HIV/AIDS pandemic have stimulated much research and campaigning around health-risk behaviours. A great deal of the campaigning and health interventions are based on applied research that inform communities, researchers and programme initiatives on structuring an appropriate intervention program that is most

suitable to the area of application and that would enhance the responsiveness of the programme.

Most applied research investigating health-risk behaviours in various contexts and cultures obtain their information from survey methods like structured interviews and self-report questionnaires (Blair and Piccinino, 2004; Catania, 1999; Catania et al., 1990a; Chavkin, 2001; Jagannathan, 2001; Smit et al., 2005; Weinhardt et al., 1995; Zenilman et al., 1998). However, if the information derived from these methods proves to be unreliable due to untruthful responses from the participants, the resulting recommendations for intervention would be ill informed and subsequently compromise its success on application.

In aiming to explore the relationship between reliability of responses and type of survey technique, this study could highlight the quality of data generated by survey methods, and provide insight into the potential obstacles of self-report methods. This would subsequently inform areas for improvement in self-disclosure research and facilitate the accuracy of the conclusions drawn from such studies and consequently increase the suitability and success of health interventions implemented as a result thereof.

3.3 Hypotheses

The following null hypotheses were tested:

H₀₁: There is no significant difference in mean self-disclosure among the SAQ, FTFI and the ICVI.

H₀₂: There is no significant difference in participants' mean social desirability bias scores across the three methods.

H₀₃: There is no association between social desirability bias and self-disclosure.

In accordance with the hypotheses set forth, the following postulations were made:

P₀₁: The ICVI will achieve a higher mean self-disclosure than the SAQ and the FTFI.

P₀₂: The ICVI will display the lowest mean social desirability bias score across the three methods.

P₀₃: The FTFI will display a lower mean self-disclosure score, but higher mean social desirability bias score than the ICVI.

P₀₄: The association between social desirability bias and self-disclosure is indirectly proportional, in that an increase in self-disclosure score is associated with a decrease in social desirability bias score, regardless of method of self-report.

3.4 Design

A three-group post-test only design was followed where the independent variable was the respective method of self-report and the respondents' associated self-disclosure and social desirability scores were the measured dependent variables. The participants were randomly allocated to one of the three self-report methods, where they answered a sexual behaviour questionnaire devised for this study as well as the Marlowe-Crowne scale (1960) of social desirability bias.

3.5 Sampling

A convenient sampling strategy was used as targeted participants were students of several tertiary level institutions around Pietermaritzburg. This strategy was chosen since the research and recruitment was conducted mostly on campus and accrual was considered possibly more successful than random sampling from the student register by simply approaching students as they were walking to and from lectures. They were also recruited in lecture theatres by the researcher.

Respondents were randomized by picking a numbered token associated to one of the three self-report methods out of a closed container, with no visibility of the token content. This strategy was chosen to completely remove any bias from the selections that the interviewers may have had, by having the participants select, by chance, into which group they would fall.

Equal numbers of tokens ($n=30$) represented a self-report method. Inclusion criteria for participation were minimum age of 18 years and registration with a tertiary education institution. Recruitment for participation was indiscriminate to type of tertiary qualification as well as particular field of practice. The sample comprised 110 undergraduate and post-graduate students at various tertiary education institutions in Pietermaritzburg from across all faculties. The sample size was in accordance with formulations to achieve statistical power of 67% with a medium effect size at ($d = 0.4$) (Gpower, 2005).

The power for the study was considered adequate at that effect size, since it allowed a considerably greater than chance occurrence for significance assessment among the three conditions, for validly rejecting a false null hypothesis.

3.6 Ethical Considerations and Informed Consent

Ethics Committee approval was not mandatory at the time of this research, and only the proposal was required to be approved by the Higher Degrees Office in the Faculty of Science and Agriculture. The approval of the proposal granted authorization to conduct the study on the University of KwaZulu-Natal campus. Permission was sought from the Heads of two additional tertiary institutions in Pietermaritzburg. Permission was granted verbally to recruit participants and conduct the study on the relevant campus, provided that the campuses were not named in the write-up of the research or any publications resulting from the research.

A brief summary of what participation entailed was given and participants then either agreed or refused recruitment. If they agreed, the process of participation was fully explained as well as the procedure that will be followed for each of the self-report methods. They were given a participant information summary sheet along with a consent form. The summary sheet was explained to the person and any questions they had were answered by the researcher or research assistant. Participants that were unsure of participating were given the option to think about it and contact the researcher should they wish to participate. Confidentiality and voluntary participation was strongly reinforced by the researcher and research assistant, and the full procedure for ensuring confidentiality was explained. The participant information sheet and informed consent form templates are attached in Appendix 1. If the participant subsequently agreed to participation, they were randomly allocated to one of the self-report methods.

3.7 Participants

The age of the participants ranged from 18 years to 37 years of age, with a mean of 23. The sample comprised 67 females and 43 males distributed among the three self-report methods, as illustrated in Figure 3.1. The greatest number of participants were African (n=49), followed by White (n=37), and substantially fewer participants from Indian (n=11) and Coloured (n=13) descent as shown in Figure 3.2. In addition, there were numerous refusals to participate in the study after eligible candidates were randomized to the FTFI method. There were a smaller number of refusals to partake in the SAQ method, and no refusals in the ICVI method.

		GENDER		Total
		male	female	
method of self-report	SAQ	11	21	32
	ICVI	17	34	51
	FTFI	15	12	27
Total		43	67	110

Figure 3.1: Sex of participants respective to method of self-report.

There were more female participants overall than males, with the ICVI group displaying the highest levels of females, followed by the SAQ and FTFI respectively. Efforts in sampling sought equal gender representation, however, as participation were voluntary more females were forthcoming in participating in the study than males.

		RACE				Total
		Indian	White	African	Coloured	
method of self-report	SAQ	1	16	13	2	32
	ICVI	8	9	26	8	51
	FTFI	2	12	10	3	27
Total		11	37	49	13	110

Figure 3.2: Cross tabulation participant race respective to method of self-report.

Despite efforts to maximize racial representivity, participants from the Indian and Coloured race groups were not willing to participate in the study, and several attempts to recruit candidates from these ethnic minorities were unsuccessful. Consequently, there were more White and African participants, with a significant proportion of Africans reporting by use of the ICVI method.

3.8 Materials

3.8.1 Measures

The data collection tools consisted of two measures and an apparatus (discussed below) for the administration of measures in the ICVI method. The Marlowe-Crowne scale of social desirability bias (Crowne and Marlowe, 1960) and the sexual behaviour questionnaire, which was devised for use in this study, was implemented as the data collection tools for analyses and comparison across self-report methods. These are attached in appendix 2 for reference.

The Marlowe-Crowne scale was designed to evaluate the social desirability response set of participants, which is thought to influence the reliability of responses. This scale achieved an internal consistency coefficient of 0.88 using the Kuder-Richardson formula. The scale correlated closely with the MMPI and the Edwards Social

Desirability scale (Crowne and Marlowe, 1964). The scale is composed of 33 items in “true/false” answer format, with 18 items keyed true and 15 false. Scoring of the participants’ results utilized a simple “true/false” template to the items, where each correct answer as determined by the scale composition is credited one point, with a minimum score of 0 and a maximum score of 33.

Accordingly, a high score on this scale reflects a high social desirability bias response set. The participants’ performance on this scale was evaluated against their score on the sexual behaviour questionnaire for assessment of association between social desirability bias and self-disclosure.

The sexual behaviour questionnaire (SBQ) was purposely designed for use in this study and drew content from various questionnaires with permission. It included adapted content from Aquilino’s (1994) use of *the National Household Survey on Drug Use (USA)* and items from Gregson et al. (2002) based on their study on the efficacy of the ICVI in reducing social desirability bias, as well as items from the South African National Blood Service donor questionnaires.

The questionnaire consisted of two sections: General health and sexual behaviour practices. The reliability statistics were calculated based on the total scale and the items used to formulate the self-disclosure score used in the analysis.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.625	.611	24

Figure 3.1: Reliability statistics of the sexual behaviour questionnaire consisting of only the items used for the calculation of the self-disclosure score.

The SBQ achieved an internal consistency coefficient of 0.625 (Cronbach's Alpha). This indicated that the items used in the self-disclosure formula correlated closely with the sum of the remaining items, and showed a fair degree of internal consistency. Although the scale did not achieve the desired alpha of 0.70 generally sought for social science, it is noteworthy that this scale was only administered to 110 participants.

The SBQ was structured along a dimension of increasing sensitivity with regards to question content. The items were judged to be very private, enquiring about the respondent's sexual history, number of partners, frequency of intercourse and sexual practices such as masturbation and anal sex. The SBQ was devised to gauge the respondent's self-disclosure across the three self-report methods. Respondents' performances on the SBQ would be indicative of which self-report method was more successful in ameliorating their concerns about confidentiality and anonymity, thus enabling them to provide more reliable information of personal practices. The items of the SBQ required yes/no/don't know or numerical (eg. "How many times") answers or provided appropriate Likert scale options (such as never/frequently) for respective questions. Respondents had the option to refuse to answer questions, and these were noted by either the respondent or interviewer onto the questionnaire or response token.

The respondent's performance on the SBQ was measured by a predetermined formula comprising the responses to the items, where options per item were weighted relative to other options. The weightings were assigned by consensus among 5 judges based on responses regarded as normative, contra-normative, undesired, potentially embarrassing and severely risky. The respondent's scores on the SBQ were compared to the total score obtainable per response set of absolute self-disclosure, therefore enabling

the calculation of a mean score per response set to be analyzed for comparison across the three self-report methods.

3.8.2 Apparatus

The ICVI method as designed by Gregson et al. (2002) made use of a portable wooden voting box, completely secure with two separate compartments, each with a voting slot. This design is unique to this method of self-report. The voting box is pre-locked in two places: at the voting slot cover, which is never opened until after data collection, and locked at the lid. The hinged lid of the box serves as a large screen for the respondent, concealing their responses from the interviewer. The one compartment is used to collect the signed informed consent forms, so to prevent the interviewer from learning the respondent's name, and the other compartment collects the response tokens used by the respondent to answer the questions. In responding to the items, the ICVI had a set of voting tokens per respondent. Voting tokens are small sets of paper that reflect only the item number and the relevant options available for that item. There are five item responses per token. This facilitates anonymity since after every five questions; the participant can safely post his/her responses into the secure slot, therefore preventing an accumulation of responses. The voting tokens have the respondent's unique PID (participant identification number) on the back. This enabled the rebuilding of the participant's response set.



The ICVI apparatus reflecting two “voting slots”, with the lid acting as a screen for the participant.

3.9 Procedure

The purpose and procedure of the study was explained to participants, and they were given an information sheet as a brief synopsis of the pertinent points of participation, where after they signed an informed consent form. All interviews in the ICVI and FTFI group were conducted in a secure office with the door and curtains closed.

The researcher commissioned the assistance of an independent enumerator (research assistant) to aid in the data collection process. The research assistant was trained over several days on the purpose of the research, the materials and the methods. The research assistant conducted a mock recruitment, informed consent and question/answer session with the researcher. In addition, the research assistant administered a FTFI and an ICVI with the researcher, as well as covered the requirements for the SAQ. The researcher regularly met the research assistant at least twice a week to discuss recruitment, procedure and any problems that have arisen.

Both the Marlowe-Crowne scale (MCS) and the SBQ were applied in the same format across all three self-report methods. For each of the methods the CMS was administered first, followed by the SBQ. This ensured standardization of data tool administration to reduce potential confounding of results by variable administration that may produce unknown effects in response sets. Standardized instructions were followed on all interviews conducted for the ICVI and the FTFI and standard information was verbally provided to all participants disclosing via the SAQ. The researcher assisted an independent enumerator in the data collection process. It is noteworthy to mention that both were female, and that the researcher was White and the independent enumerator was African. This may have influenced the data collection process, although care was taken to distribute FTFI's and ICVI's evenly between both the researcher and the enumerator so as to minimize any potential confounding effects.

3.9.1 Informal Confidential Voting Interview

The researcher and an independent enumerator each administered the ICVI to respective participants. A standardized format for the ICVI was followed where the method was introduced and the process of participation explained to the participant. The participant was given the opportunity to physically examine the voting box and practically assess its utility and its ability to provide anonymity. The lid of the voting box, acting as a screen to the interviewer, ensured anonymity of the responses as well as of the PID of the participant. The compact voting box was manoeuvrable to the participant, and they could move the box around to their desired location for the lid to be maximally operative as a screen to the enumerator.

The participant could choose a set of response tokens from the remainder of the blank sets of voting tokens with ranging PIDs. The sets of response tokens were furnished in an envelope and consequently the interviewer was unaware of which PID the participant selected. Anonymity of the responses was thus attained since no personal identification, the participant PID or the actual responses were made available to the enumerator.

The interviewer read each question followed by a concise explanation thereof, whereby the participant marked the most appropriate option provided on the token, and “voted” the response into the voting box. Since no voting tokens were removed from the voting box until it reached capacity, participants’ responses were consequently mixed together. The response sets were reconstructed by the researcher by use of the matching PID numbers on each of the voting tokens.

3.9.2 Self Administered Questionnaire

Participants randomized to the SAQ group were immediately given an envelope containing the Marlowe-Crowne scale and the SBQ as well as a set of instructions of what is required in answering the questionnaires. These instructions were also verbally explained to the participant. All the pages of the questionnaires had a unique PID per participant, and like the ICVI, these PIDS were not disclosed to the enumerator. No other personal or identifiable information was required or furnished. Completed questionnaires were sealed in the envelope and mailed into a secure collection box placed in a protected common venue out of public sight. There was no extended contact with the participants other than explaining what is required in participation, and by not alluding to questionnaire content, enumerators avoided influencing participant responses.

Participants' anonymity were facilitated by this lack of personal interaction as well as by the enumerator's naivety to the PIDs selected by the participant.

3.9.3 Face-to-Face Interview

Participants randomized to the FTFI were scheduled for the interview at their convenience. The process of participation was fully explained to the participant. The enumerator asked each question, followed by an explanation of the item. The participant's responses were recorded on the answer sheet by the enumerator. Each answer sheet reflected the participant's PID. After the interview the FTFI answer sheets were placed in a secure box for collection by the researcher.

4. RESULTS

The data collected from the three respective methods of self-report were set for comparison on the extent of self-disclosure of sexual experience and high risk sexual behaviours from the Sexual Behaviour Questionnaire (SBQ) and social desirability bias as measured by the Marlowe-Crowne scale (MCS). The raw data was scored according to the scoring techniques described in the above section, and was entered into SPSS by an independent research assistant who was not part of the data collection process. This aimed to enhance data reliability and independence of data collection and data entry by persons who have vested interests in the study. The data was analysed by SPSS 13.0, and all comparative tests were two-tailed and set at the significance level of $\alpha = 0.05$.

4.1: Performance of self-report methods on non-sensitive items

Descriptives

nonsensitive								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
SAQ	32	36.7500	4.45044	.78673	35.1454	38.3546	25.00	43.00
ICVI	51	35.5882	4.42347	.61941	34.3441	36.8324	23.00	43.00
FTFI	27	37.0000	4.50641	.86726	35.2173	38.7827	29.00	45.00
Total	110	36.2727	4.45757	.42501	35.4304	37.1151	23.00	45.00

Table 4.1: Self-disclosure on non-sensitive items by self-report method

All 3 methods of self-report exhibited a similar mean in self-disclosure scores, with an observable range between 35.59 (ICVI) to 37 (FTFI).

ANOVA

nonsensitive					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	45.465	2	22.733	1.147	.321
Within Groups	2120.353	107	19.816		
Total	2165.818	109			

Table 4.2: ANOVA test on the mean difference of self-disclosure scores on non-sensitive items by method of self-report.

The mean differences among self-disclosure scores attained by the 3 respective methods were non-significant at $F=1.147$ for $\alpha=0.05$ with $p=0.321$. The participants displayed no clear preference for any method upon reporting on items considered to be less threatening or non-sensitive.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid SAQ	32	29.1	29.1	29.1
ICVI	51	46.4	46.4	75.5
FTFI	27	24.5	24.5	100.0
Total	110	100.0	100.0	

Table 4.3: Participation frequencies of the three methods of self-report

The face-to-face interview (FTFI) had the lowest level of participation (24.5%) compared to the SAQ (29.1%) and the ICVI (46.4%). Whilst randomization does ensure approximately equal sample sizes, it was documented that 23 participants refused to engage in the FTFI and 5 refused to complete the SAQ, upon randomization to these self-report methods. No student refused participation in the ICVI.

4.2: Performance of the 3 self-report methods as measured by the self-disclosure score

SDSCORE

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
SAQ	30	36.2333	12.86450	2.34873	31.4296	41.0370	21.00	73.00
ICVI	44	52.2045	32.24079	4.86048	42.4024	62.0066	19.00	147.00
FTFI	19	34.6316	7.19730	1.65117	31.1626	38.1006	20.00	47.00
Total	93	43.4624	24.85635	2.57748	38.3433	48.5815	19.00	147.00

Table 4.4: Descriptive statistics of the three methods of self-report with self-disclosure score as the factor (n=110)

The FTFI attained the lowest mean in self-disclosure score (34.6), followed closely by the SAQ with a mean of 36.2. The ICVI achieved a greater mean of 52.2, however with a much greater range in self-disclosure scores than the other self-report methods with a minimum score of 19 and a maximum score of 147.

ANOVA

SDSCORE

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6412.171	2	3206.086	5.722	.005
Within Groups	50428.947	90	560.322		
Total	56841.118	92			

Table 4.5: Analysis of Variance test for self-disclosure score as the dependant variable among the three self-report methods

The test for mean difference in self-disclosure score among the three self-report methods was significant at the $\alpha=0.05$ level using a two-tail F-statistic, with $F=5.722$ and accordingly $p=0.005$. It is therefore concluded that there was a significant difference in self-disclosure among the three self-report methods.

Multiple Comparisons

Dependent Variable: SDSCORE

Tukey HSD

(I) method of self-repo	(J) method of self-repo	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
SAQ	ICVI	-15.9712*	5.60464	.015	-29.3276	-2.6148
	FTFI	1.6018	6.94032	.971	-14.9377	18.1412
ICVI	SAQ	15.9712*	5.60464	.015	2.6148	29.3276
	FTFI	17.5730*	6.49809	.022	2.0874	33.0586
FTFI	SAQ	-1.6018	6.94032	.971	-18.1412	14.9377
	ICVI	-17.5730*	6.49809	.022	-33.0586	-2.0874

*. The mean difference is significant at the .05 level.

Table 4.6: Post-hoc test for multiple comparisons between self-disclosure score (dependant variable) and method of self-report

(Harmonic mean was used for these calculations since the group sizes were unequal)

Tukey's HSD was conducted following a significant ANOVA, to determine which methods in comparison exhibited the greatest difference in self-disclosure score. The mean difference in self-disclosure score between the SAQ and ICVI (15.97) reached significance at $p=0.015$, as well as the mean difference between the ICVI and the FTFI (17.57) was found to be significant at $p=0.022$. However, there was no significant difference displayed for the mean self-disclosure score for the SAQ in comparison with the FTFI, with a mean difference of 1.60 at $p=0.97$.

4.3: Performance on the 3 self-report methods reporting on the Marlowe-Crowne scale

SDBSCORE

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
SAQ	32	14.1875	2.94506	.52062	13.1257	15.2493	8.00	20.00
ICVI	51	12.6275	2.93912	.41156	11.8008	13.4541	6.00	18.00
FTFI	27	14.1852	3.91287	.75303	12.6373	15.7331	5.00	27.00
Total	110	13.4636	3.26976	.31176	12.8457	14.0815	5.00	27.00

Table 4.7: Descriptive statistics for social desirability score attained in the Marlowe-Crowne scale respective to the three self-report methods

The SAQ exhibited a mean score of 14.19 with a minimum of 8 and a maximum of 20. The ICVI displayed a mean score of 12.63, with a minimum score of 6 and a maximum score of 18. The FTFI displayed a similar mean score to the SAQ at 14.19, but exhibited a larger range of scores across all three self-report methods with a minimum of 5 and a maximum of 27.

SDBSCORE

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	66.484	2	33.242	3.237	.043
Within Groups	1098.871	107	10.270		
Total	1165.355	109			

Table 4.8: Analysis of Variance test for social desirability score as the dependant variable in comparison among the three self-report methods

The comparison of mean difference in social desirability score as calculated by the Marlowe-Crowne scale across the three self-report methods were significant at the $\alpha=0.05$ (two-tailed) level, with $F = 3.237$ and $p=0.043$.

Dependent Variable: SDBSCORE

Tukey HSD

(I) method of self-report	(J) method of self-report	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
SAQ	ICVI	1.5600	.72270	.083	-.1577	3.2777
	FTFI	.0023	.83743	1.000	-1.9881	1.9927
ICVI	SAQ	-1.5600	.72270	.083	-3.2777	.1577
	FTFI	-1.5577	.76271	.107	-3.3705	.2551
FTFI	SAQ	-.0023	.83743	1.000	-1.9927	1.9881
	ICVI	1.5577	.76271	.107	-.2551	3.3705

Table 4.9: Multiple comparisons for social desirability score among the three self-report methods

Following a significant ANOVA, a Tukey’s HSD was conducted to ascertain which of the methods were significantly different to the others. Despite a marginally significant ANOVA, there appears to be no affirmative significant mean difference in social desirability score among any of the methods in comparison. The SAQ and the ICVI displayed the largest mean difference of 1.56, not significant with $p=0.083$. The FTFI and the SAQ had a relatively small mean difference of 0.0023, indicating similar performance in the Marlowe-Crowne scale.

4.4 Self-disclosure respective to participant gender

SDSCORE

GENDER	Mean	N	Std. Deviation
male	52.4516	31	29.40276
female	38.9677	62	21.09616
Total	43.4624	93	24.85635

Table 4.10: Descriptive statistics for participant gender respective to mean self-disclosure scores.

Males achieved a higher mean self-disclosure score at 52.45 compared to the female mean score of 38.97, irrespective of self-report method.

			Sum of Squares	df	Mean Square	F	Sig.
SDSCORE * GENDER	Between Groups	(Combined)	3757.505	1	3757.505	6.441	.013
	Within Groups		53083.613	91	583.336		
	Total		56841.118	92			

Table 4.11: Oneway ANOVA test comparing mean self-disclosure score per gender.

The mean difference in gender disclosure was significant at $F=6.44$ for $\alpha=0.05$ with $p=0.013$. Males seemed to exhibit a tendency for higher self-disclosure than females.

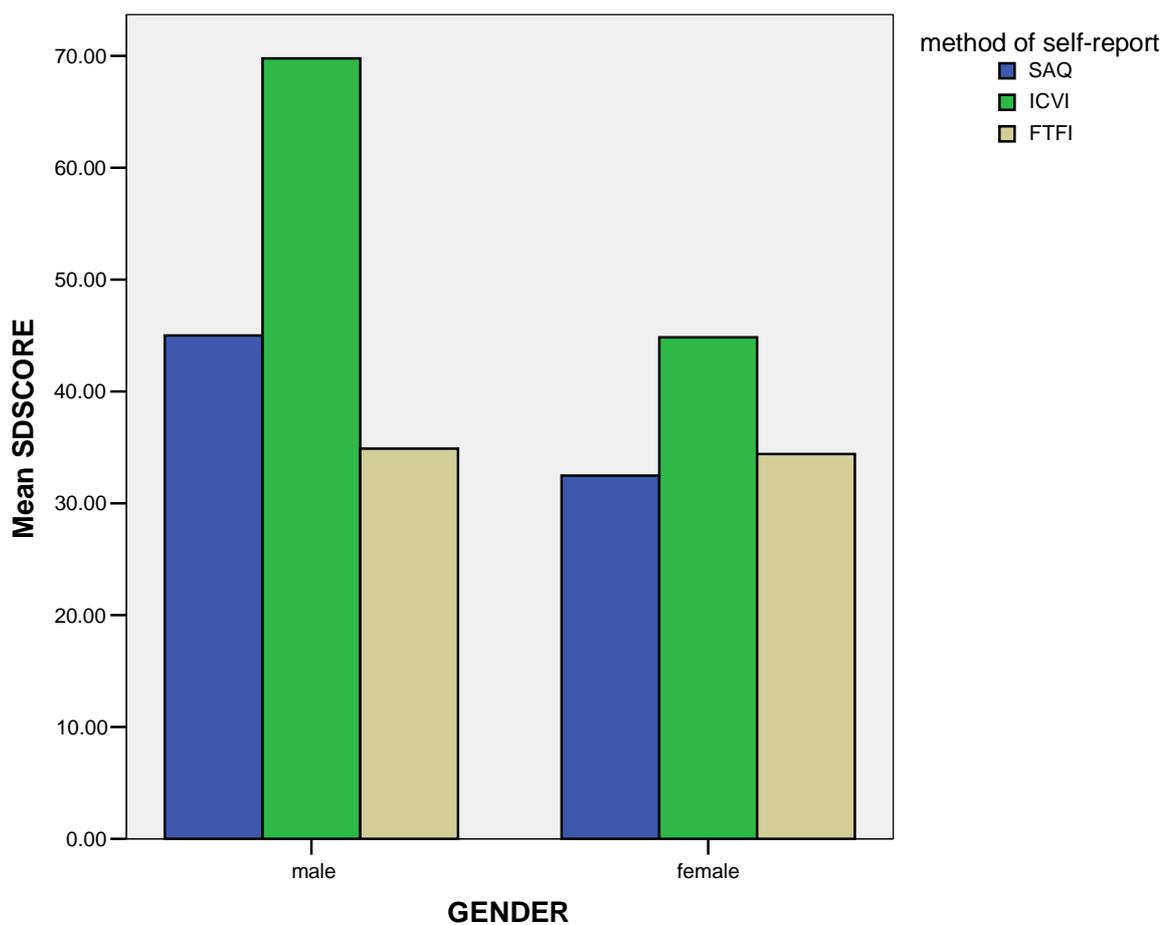


Figure 4.1: Male and female mean self-disclosure scores specific to method of self-report.

SDSCORE

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					SAQ	9		
ICVI	13	69.7692	37.65004	10.44224	47.0175	92.5209	24.00	130.00
FTFI	9	34.8889	7.16667	2.38889	29.3801	40.3977	23.00	47.00
Total	31	52.4516	29.40276	5.28089	41.6666	63.2366	23.00	130.00

Table 4.12: Descriptive statistics for males respective to self-report method.

The FTFI exhibited the lowest mean self-disclosure score of 34.89, followed by the SAQ with a mean of 45.00 whereas the ICVI achieved the highest mean self-disclosure of 69.77.

SDSCORE

			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		7174.481	2	3587.240	5.354	.011
	Linear Term	Unweighted	460.056	1	460.056	.687	.414
		Weighted	460.056	1	460.056	.687	.414
		Deviation	6714.425	1	6714.425	10.021	.004
Within Groups			18761.197	28	670.043		
Total			25935.677	30			

Table 4.13: Oneway ANOVA test comparing mean male self-disclosure specific to each method of self-report.

There was a significant difference in male mean self-disclosure per method used with $F=5.35$ for $\alpha=0.05$ and $p=0.011$, indicating a preference for 1 particular method in divulging sensitive information.

Following a significant ANOVA, a post-hoc test (Tukey's HSD) was calculated to reveal the source of difference in male preference of self-report method:

Dependent Variable: SDSCORE
 Tukey HSD

(I) method of self-report	(J) method of self-report	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
SAQ	ICVI	-24.76923	11.22457	.087	-52.5427	3.0043
	FTFI	10.11111	12.20239	.689	-20.0819	40.3041
ICVI	SAQ	24.76923	11.22457	.087	-3.0043	52.5427
	FTFI	34.88034*	11.22457	.012	7.1068	62.6539
FTFI	SAQ	-10.11111	12.20239	.689	-40.3041	20.0819
	ICVI	-34.88034*	11.22457	.012	-62.6539	-7.1068

*. The mean difference is significant at the .05 level.

Table 4.14: Multiple comparisons of mean male self-disclosure score on method of self-report.

There was no significant difference between scores attained on the SAQ compared to the ICVI ($p=0.087$), despite the ICVI achieving a greater mean score than both the SAQ and FTFI. Similarly, the SAQ did not attain a significant mean difference in self-disclosure compared to the FTFI with $p=0.689$. The source of significance in mean disclosure existed between the ICVI and the FTFI with $p=0.012$. Males evidently favoured this method to the FTFI, but only marginally so compared to the SAQ, in disclosing intimate information.

SDSCORE

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
SAQ	21	32.4762	11.11584	2.42568	27.4163	37.5361	21.00	72.00
ICVI	31	44.8387	27.07655	4.86309	34.9069	54.7705	19.00	147.00
FTFI	10	34.4000	7.60409	2.40463	28.9604	39.8396	20.00	46.00
Total	62	38.9677	21.09616	2.67922	33.6103	44.3252	19.00	147.00

Table 4.15: Descriptive statistics of mean self-disclosure of females per self-report method.

The FTFI had a marginal greater mean than the SAQ at 34.400 opposed to 32.476. The ICVI had a substantially greater mean of self-disclosure by females at 44.838.

SDSCORE

			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		2162.104	2	1081.052	2.553	.086
	Linear Term	Unweighted	25.072	1	25.072	.059	.809
		Weighted	282.857	1	282.857	.668	.417
		Deviation	1879.247	1	1879.247	4.438	.039
Within Groups			24985.832	59	423.489		
Total			27147.935	61			

Table 4.16: Oneway ANOVA test comparing mean female self-disclosure specific to each method of self-report.

There was no significant difference in female self-disclosure scores across the 3 methods, indicating that despite a preference to divulging sensitive information via the ICVI, the mean difference is not of significant magnitude. For the 61 female participants, $F=2.553$ at $\alpha=0.05$ with $p=0.086$.

As no significance was attained in the ANOVA, no post-hoc tests were computed.

4.5 Social desirability bias respective to participant gender

SDBSCORE

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
SAQ	11	17.0000	3.63318	1.09545	14.5592	19.4408	11.00	24.00
ICVI	17	18.1176	4.12132	.99957	15.9987	20.2366	10.00	23.00
FTFI	15	18.9333	4.74291	1.22462	16.3068	21.5599	12.00	28.00
Total	43	18.1163	4.20436	.64116	16.8224	19.4102	10.00	28.00

Figure 4.17: Mean social desirability bias scores for males specific to method of self-report.

Males in the FTFI group displayed a marginally higher mean social desirability bias score than the ICVI respondents, with the SAQ attaining the lowest mean on the Marlowe-Crowne scale at 17.00.

ANOVA

SDBSCORE

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23.721	2	11.860	.660	.522
Within Groups	718.698	40	17.967		
Total	742.419	42			

Figure 4.18: ANOVA of male social desirability bias scores per method of self-report.

There was no significant difference between mean male social desirability bias scores across the 3 methods of self-report, with $F=0.660$ for $\alpha=0.05$ where $p=0.522$.

SDBSCORE

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
SAQ	21	18.7143	3.25796	.71094	17.2313	20.1973	13.00	26.00
ICVI	34	18.6765	4.31853	.74062	17.1697	20.1833	7.00	27.00
FTFI	12	18.4167	2.87492	.82992	16.5900	20.2433	13.00	21.00
Total	67	18.6418	3.73234	.45598	17.7314	19.5522	7.00	27.00

Figure 4.19: Descriptive statistics for mean female social desirability bias scores.

Female respondents illustrate similar mean social desirability bias scores as the males, however the SAQ achieved the highest mean of 18.7143, followed by the ICVI and the FTFI with the marginally lower mean.

SDBSCORE

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.759	2	.380	.026	.974
Within Groups	918.644	64	14.354		
Total	919.403	66			

Figure 4.20: ANOVA for mean female social desirability bias scores respective to method of self-report.

There was evidently no significant difference among the female respondents with regards to the method of self-report, with $F=0.026$ at $\alpha=0.05$ with $p=0.974$.

4.6 Measures of association and relationship between self-disclosure and social desirability bias

Correlations

		SDSCORE	SDBSCORE
SDSCORE	Pearson Correlation	1	-.182
	Sig. (2-tailed)	.	.080
	Sum of Squares and Cross-products	56841.118	-1287.409
	Covariance	617.838	-13.994
	N	93	93
SDBSCORE	Pearson Correlation	-.182	1
	Sig. (2-tailed)	.080	.
	Sum of Squares and Cross-products	-1287.409	1165.355
	Covariance	-13.994	10.691
	N	93	110

Table 4.21: Correlation of social desirability score to self-disclosure score

The self-disclosure scores and the social desirability bias scores were correlated to determine any association. Pearson’s correlation was found to be not significant at $\alpha=0.05$ (two-tailed) with $R= -0.182$ and $p=0.08$. In fact it exhibited a fairly weak correlation at that value.

Methodl	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.096 ^a	.009	-.002	24.87616

a. Predictors: (Constant), SDBSCORE

b. Dependent Variable: SDSCORE

Table 4.22: Regression summary of self-disclosure with social desirability bias score as the predictor.

Social desirability bias score displayed a very weak predictive function for self-disclosure score, with $R^2 = 0.009$

Methodl		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	528.182	1	528.182	.854	.358 ^a
	Residual	56312.936	91	618.823		
	Total	56841.118	92			

a. Predictors: (Constant), SDBSCORE

b. Dependent Variable: SDSCORE

Table 4.23: ANOVA of regression of social desirability bias against self-disclosure.

The postulated regression methodl was not significant, indicating a poor regression methodl fit with $F=0.854$ and $p=0.358$. This illustrated that social desirability bias score poorly predicted self-disclosure scores.

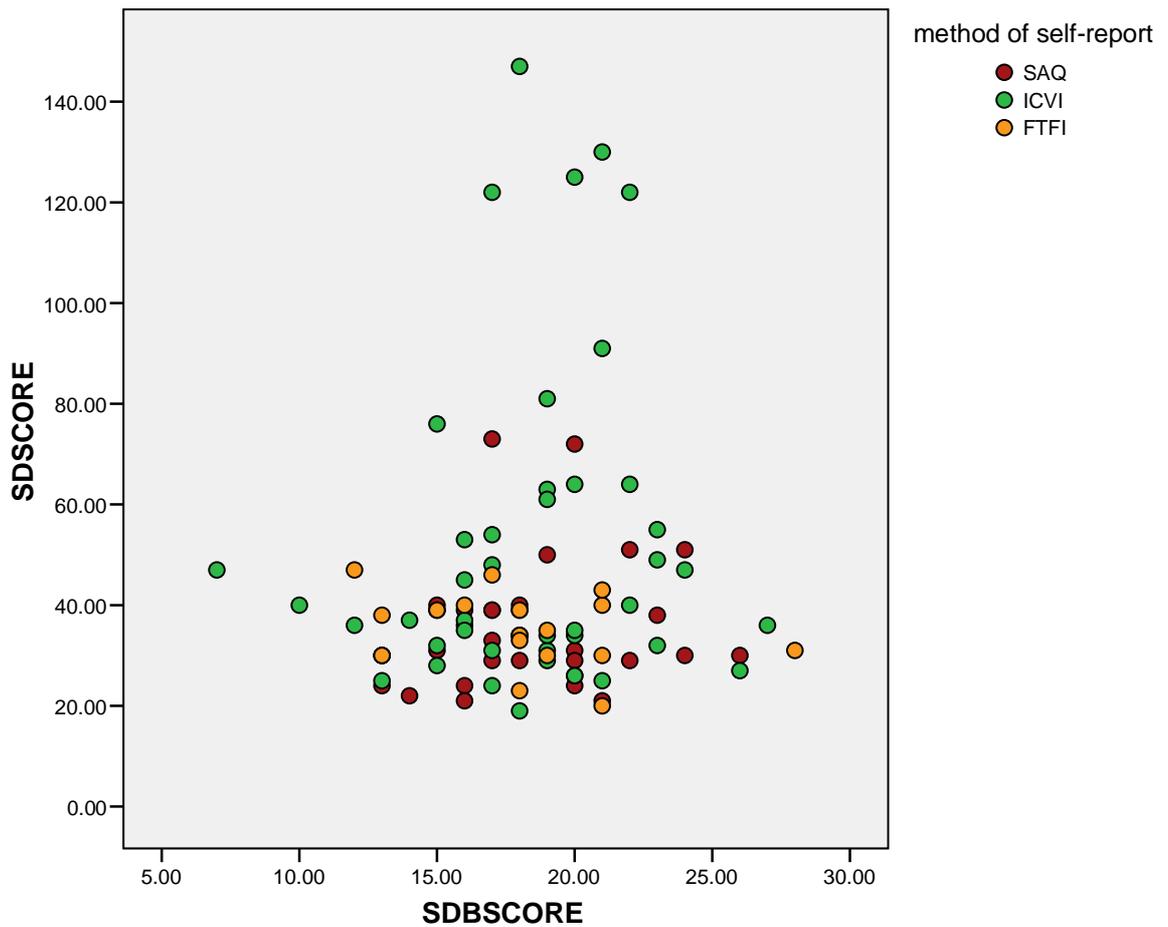


Figure 4.2: Scatterplot of self-disclosure and social desirability bias scores respective to method of self-report.

There seemed to be no definitive pattern of response on the Marlowe-Crowne scale that was associated to a trend in self-disclosure of participants. The mean response scores were concentrated between 15 and 25 on the Marlowe-Crowne scale, with an associated mean self-disclosure score between 20 and 60. No consistent response trend was identified for any of the self-report methods, with high self-disclosure and low social desirability bias and vice versa seen across all methods.

Tests of Between-Subjects Effects

Dependent Variable: SDSCORE

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Corrected Model	6898.278 ^b	3	2299.426	4.098	.009	.121	12.293	.832
Intercept	11080.231	1	11080.231	19.745	.000	.182	19.745	.993
SDBSCORE	486.107	1	486.107	.866	.355	.010	.866	.151
method	5010.462	2	2505.231	4.464	.014	.091	8.929	.752
Error	49942.840	89	561.156					
Total	232516.000	93						
Corrected Total	56841.118	92						

a. Computed using alpha = .05

b. R Squared = .121 (Adjusted R Squared = .092)

Table 4.24: Analysis of Variance test for self-disclosure score respective to method of self-report, with social desirability score as the covariate

Self-disclosure score with social desirability bias score as a covariate was non-significant at $F=0.866$ with $p = 0.355$, indicating that social desirability bias was not a covarying event in self-disclosure via one of the three self report methods. In other words, self-disclosure exhibited by the participants was independent to performance on the Marlowe-Crowne Scale of social desirability bias. It was evident that the participants' degree of social desirability bias did not affect their degree of self-disclosure, measured by the various methods.

5. DISCUSSION

5.1 General Discussion

It is interesting to note the patterns of participation during the recruitment drive (Table 4.3). Of the total sample size of 110 participants, the FTFI accrued the least amount of respondents (27), followed by the SAQ (32), despite the equiprobable randomization algorithm followed. As many as 23 potential candidates refused to participate after being randomized to the FTFI method. The two most frequently cited reasons for refusals were that they feel too vulnerable to answer questions about their sex life to another individual and that they would prefer anonymity. Several of these candidates claimed that they would still participate should they be allowed to complete the SAQ or the ICVI instead. However, this was not permitted by the study design. Theoretically, the sample of the FTFI respondents would have been 50. The SAQ similarly had some five refusals to participate, with the only reason cited by all five candidates as their lack of trust in the method's anonymity. In sharp contrast, no randomized candidate refused participation in the ICVI. Accordingly, the level of participation is somewhat skewed toward the ICVI, with 46.4% of the entire sample responding via this method. It is pertinent to mention that this lack of refusal may have been attributed to the respondents' interest, curiosity and greater level of trust in the method's characteristics and assured anonymity. Regardless of this skew toward the ICVI, the statistical tests employed in the analyses weight unequal sample sizes accordingly.

5.2: Performance of the 3 self-report methods as measured by the self-disclosure score

To determine that the observed patterns of report were due to method efficacy and its relation to the item content, an ANOVA was run on the mean difference of self-disclosure scores on the neutral items by method of self-report (Table 4.2). The non-significance of the ANOVA ascertained that the participants did not show predilection for any method of answering non-sensitive questions. This established that no confounding reporting trends were underlying the observed response trends. Hence the participants' responses on the sensitive items indicated preference for a self-report method, due to its efficacy in increasing self-disclosure.

The analysis of the primary focal point of this research study revealed that there was a significant difference in mean self-disclosure among the three self-report methods (refer to Table 4.5) with $p < 0.005$. Table 4.7 indicated that the ICVI achieved the highest mean self-disclosure score, followed by the SAQ with the FTFI closely matching the mean of the SAQ. Accordingly, we reject the null hypothesis H_{01} , and conclude that there is a significant difference in self-disclosure among the three methods. This is in support of the Gregson et al. (2002) study findings that found higher levels of self-disclosure by means of the ICVI than in the FTFI.

The post-hoc analysis in Table 4.6 illustrated that the mean self-disclosure for the ICVI in comparison with both the SAQ and FTFI attained significance, which indicated that participants were more disclosing in the ICVI than in either the SAQ and FTFI. This provided support for the postulation P_{01} that stated "The ICVI will achieve higher mean self-disclosure than the SAQ and FTFI" (page 20). The SAQ in turn displayed a higher mean score (36.63) than the FTFI (34.63) that implied some success to the method that

provided greater anonymity. The FTFI which afforded no anonymity (despite the interviewer's assurance of confidentiality) revealed the lowest mean self-disclosure score. These results are in accordance with finding from studies by Aquilino and Lo Sciuto (1990), Catania et al. (1990a), Gregson et al. (2004), Gribble et al. (1999), Jagannathan, (2001), Jourard and Lasakow, (1958) and Mensch and Kandel (1988). The significant mean differences lay exclusively between the ICVI and the SAQ, and the ICVI and the FTFI. There was no significant difference in self-disclosure scores between the SAQ and the FTFI, which is contrary to what the literature suggests (Aquilino and Lo Sciuto, 1990; Catania et al., 1990a). This may have been indicative of participants' perceptions of anonymity and confidentiality afforded by these two methods, in that those that reported via the SAQ did not experience a substantially greater level of trust in anonymity than participants using the FTFI.

Reasons for this unexpected finding could lie with the subsample of respondents that utilized the FTFI and the SAQ. There were almost twice as many females that disclosed using the SAQ (Table 3.1) and they had a significantly lower self-disclosure score on the SAQ at 32.48 (Table 4.15) as opposed to the males who achieved a mean score of 45 (Table 4.13) with only 11 respondents. For the FTFI both sexes achieved fairly similar mean self-disclosure scores (Table 4.13 and Table 4.15). These subsample disclosure trends allude to what seems to be female aversion in disclosing via the SAQ, which is discussed further under section 5.3 (page 60). These underlying trends could have diluted the response pattern and hence the potential difference between the SAQ and FTFI would not be apparent.

Scrutinizing the results, it can be seen that there was a propensity for participants to disclose more sensitive information in the ICVI than in the other two self-report

methods. This distinctive trend, in support of the Gregson et al. (2002) study findings, is attributed to the design of the ICVI. It afforded the participants the ability to clarify questions with the enumerator, resulting in more accurate data, whilst guaranteeing anonymity that is directly assessable by the participant. The ICVI has the advantages of both the FTFI and the SAQ, but is more progressive with regards to participant control over the interview and response anonymity. This method could also be more adaptable to the participant's needs, with the interviewer able to actively ameliorate the participant's concerns as they arise. In contrast to the FTFI, the ICVI adds the advantage of anonymity of response, and in comparison to the SAQ, it provides a forum for discussion and clarification of question content, which is lacking in the SAQ. These findings are in support of Aquilino (1994), Catania (1999), Catania et al. (1990b), Gribble et al. (1999), Jagganathan, (2001), Metzger et al. (2000), Schwarz et al. (1991), Tourangeau and Smith (1996), Weinhardt et al. (1998), Zenilman et al. (1995) who claimed that the method that can best ameliorate anonymity and confidentiality concerns and provide clarity on item content will facilitate greater self-disclosure from participants.

Data collected from SAQ's involving intricate question detail or terms phrased in manners open to interpretation, may not be an accurate reflection of the actual events experienced by the participant after analysis, since individual interpretation and administration of the questionnaire cannot be fully standardized in practice. However, this can be achieved with the ICVI, with training on standardized administration by the enumerator and clarification of items to the participants so as to negate any need for interpretation. Data collected by means of the ICVI should show greater internal validity and be a more accurate expression of actual events and facts.

5.3: Performance on the 3 self-report methods reporting on the Marlowe-Crowne scale

The three self-report methods performed similarly on the Marlowe-Crowne scale of social desirability bias. Table 4.7 (page 29) displays the mean social desirability bias scores, revealing a significant difference at $p=0.043$ (Table 4.8, page 29). However, the multiple comparisons shown on Table 4.9 indicated substantial difference in scores among the three self-report methods. The greatest difference was between the SAQ and the ICVI, and the FTFI and the ICVI, but no significance was achieved at the $\alpha=0.05$ level. Nonetheless, due to the analysis results displayed in Table 4.8, we reject the null hypothesis H_{02} and conclude that there are significant differences in participants' mean social desirability bias scores among the three methods.

Upon inspection of the mean scores in Table 4.7, it is seen that the SAQ attained the highest mean of 14.186, marginally higher than the FTFI at 14.185. The ICVI scored the lowest on the Marlowe-Crowne scale with a mean score of 12.63. This is in support of postulation P_{02} that predicted the ICVI to exhibit lower scores of social desirability bias than the SAQ and FTFI. This is also in support of postulation P_{03} that stated that the FTFI will achieve the lowest self-disclosure score, but will score higher than the other methods on the Marlowe-Crowne scale.

These results may be indicative of participants' perceptions of anonymity and confidentiality that a method offers. The FTFI having offered no anonymity was very susceptible to the influence of social desirability bias on participants' responses as witnessed by the higher scores on the Marlowe-Crowne scale. It is therefore not surprising that participants reporting by means of the FTFI exhibited the lowest self-disclosure across all three methods as they may have felt vulnerable, embarrassed or

worried about the interviewer's perceptions as discussed by Aquilino (1994), Aquilino and Lo Scuito (1990), Catania et al. (1996, 1990b, 1986), Durant and Carey (2000), Jagannathan (2001), Johnson and Delamater (1976), Schwartz et al. (1991), Tourangeau and Smith (1996). Self-disclosure seemed markedly inhibited by direct verbal reporting to the interviewer. This is in favour of the findings by Gregson et al. (2002) and Schwartz et al. (1991) who claimed that the context and implementation design of FTFI markedly increase the probability for interviewer effects and question threat to influence self-disclosure.

In direct comparison, the ICVI having had the lowest mean social desirability bias score, enhanced self-disclosure by virtue of its compromising design inclusive of the benefits of having an interviewer present but not at the loss of response anonymity. Both methods are susceptible to interviewer effects, however, since responses are unknown to the interviewer in the ICVI, it removes the need for participants to censor or screen their answers due to fear of judgment or similar personal affects. The more conservative response rates in the FTFI are testimony to its failure in ameliorating interviewer effects and enabling participants to respond truthfully to sensitive topics. The high social desirability bias scores are further support for participants' hidden concerns that is vindicated on their responses to the Marlowe-Crowne questions.

The ICVI may not fully remove interviewer effects like in the SAQ, but it does control for very influential effects such as feelings of vulnerability and exposure that may be experienced by participants. Social desirability bias no doubt stems from the need to be viewed favourably by others, but if responses are anonymous, this need becomes obsolete, leaving participants to respond without justification or need to modify their responses for interviewer approval. Due to the design of the ICVI and the advantages it

offers, it is therefore not surprising that it performed significantly better than the FTFI in facilitating self-disclosure as evidenced by a greater self-disclosure score and a lower social desirability bias score on the Marlowe-Crowne scale. The SAQ offered complete anonymity since there was no interviewer present, and responses were mailed in a sealed envelope bearing no identifier information. This method performed better than the FTFI in enhancing self-disclosure, but not as well as the ICVI. However, responding to the Marlowe-Crowne scale the SAQ displayed a similar mean social desirability bias than the FTFI. This is counterintuitive as one would expect a participant reporting via the SAQ to be less influenced by social desirability bias since responses are anonymous and void of all interviewer effects. These findings are not in support of the results published by Aquilino and Lo Sciuto (1990), Durant and Carey (2000), Catania et al., (1990a), Gribble et al., (1999), Metzger et al., (2000) and Testa et al. (2005) who claimed that the use of the SAQ reduced social desirability bias due to diminished interviewer effects. Reasons for this may lie in the relatively small sample size, since any trend toward significance will be amplified with a larger sample size. But since this was not possible, reasons are speculative beyond statistical evidence. The mean self-disclosure score of the SAQ and its ranking among the methods could be explained by its design sensitivities and shortcomings in comparison to the ICVI and the FTFI. The SAQ offered anonymity to participants, but no interviewer was present to clarify queries or ambiguity that may have confused the participant, which could have undermined the data integrity as argued by Redline et al. (1998). In fact, four SAQ's were removed from analysis due to inconsistent and nonsensical responses that could have confounded the data. It appeared that participants were more comfortable in this method than in the FTFI, with only five refusals to participate after randomization, contrary to the high refusal rate of the FTFI.

The SAQ lacked continuous assurance of confidentiality that was offered in the other two self-report methods, yet it performed sufficiently better than the FTFI as to claim that perhaps these assurances of confidentiality are not a pivotal factor in enhancing self-disclosure as claimed by Catania et al. (1992, 1986), Durant and Carey (2000) and Gribble (1999). Instead it is submitted that the participant's perception of anonymity of response and control over interviewer effects are greater factors in enhancing self-disclosure. In addition and with regards to the presence of an interviewer, it can be claimed that participants' understanding of the item content and the ability to clarify confusion is not necessarily an instigator in enhancing self-disclosure, but it is essential in attaining good quality data.

5.4 Self-disclosure respective to participant gender

Analysis was conducted to investigate underlying gender trends to self-report method on self-disclosure and social desirability bias. Table 4.10 (page 30) demonstrated that males were much more forthcoming in disclosing sensitive information than females, with a significantly greater mean self-disclosure score (Table 4.11). This may allude to gender-specific response patterns. Overreporting of sexual encounters by males and underreporting thereof by females are widely recognized explanations for such reporting trends (Catania et. al., 1996; 1990b; 1986; Dindia and Allen, 1992; Gribble et al., 1999; Knudsen et al., 1967; Tourangeau and Smith, 1996), and will be discussed shortly. In addition, Hood and Back (1971) reported that volunteer bias may introduce a very subtle predisposition in survey studies relying on self-disclosure. They found that males were more disclosing than females, and that in particular male volunteers were more disclosing

than male non-volunteers. Participation in this study was completely voluntary and it could have been possible that the men who volunteered were more sexually active and experienced and were perhaps more at ease with disclosing their sexual experiences than other men whom avoided the recruitment drive for the study. This was illustrated by Mosher and Cross (1971) and Herold and Way (1988) who found greater sexual disclosure by more sexually experienced individuals. The characteristics of volunteers in this sample may have influenced self-report on an underlying dimension.

Figure 4.1 show that both males and females prefer disclosure by means of the ICVI. However, male disclosure through the SAQ is far greater than female disclosure through the same method, and it can be seen that females attained higher self-disclosure scores using the FTFI. Male and female reporting trends were further delineated by separate analyses of their disclosure by self-report method. The males had a significant predilection to report sensitive information using the ICVI (Table 4.12), but were very conservative in disclosure in the FTFI. This is interesting to note that despite males' reputation to over-report (Catania et al., 1996;1990b; Dindia and Allen, 1992; Hansen and Schuldt; 1982; Knudsen et al., 1967; Tourangeau and Smith, 1996; Zenilman et. al., 1995) their self-disclosure on the ICVI (which offers no reason to boast due to anonymity of response) still outperformed the FTFI. One would expect greater disclosure in the FTFI if overreporting was a serious factor in self-report by males. Disclosure through the SAQ achieved a higher mean score than the FTFI, but less than the ICVI. The male reporting trend supports the previous studies on method sensitivity and preference (Catania et al., 1996; Dindia and Allen, 1992; Gribble et al., 1999; Hansen and Schuldt, 1982; Jourard and Lasakow, 1958) with the SAQ being favoured over the FTFI. This also provided greater support for postulation P₀₁.

Female participants clearly showed greater disclosure levels on the ICVI than the other methods (refer Table 4.15), similar to the males' reporting patterns. With a mean self-disclosure score of 44.84, the ICVI did not achieve significance over the SAQ and FTFI mean self-disclosure with $p > 0.05$ (Table 4.16) for the female participants. It is evident by the mean self-disclosure that females were more disclosing by the use of the ICVI, but not at a significant level. The females displayed an interesting disclosure trend across the three methods of self-report. Contrary to the males and the expected response set, Table 4.15 illustrated that females in the FTFI group were more disclosing than those using the SAQ. Although the mean difference between these two methods were very small (1.92), it could be indicative that perhaps females are more sensitive to the advantages of the FTFI. Pienaar (2003) produced results indicating that females were far less disclosing in the SAQ than the males, although both sexes responded equally favourably in the ICVI.

Females tend to underreport on sensitive topics such as sexual behaviour (Catania et al., 1996; Dindia and Allen, 1992; Jourard and Lasakow, 1958), and one would expect a substantially smaller response rate in the FTFI than in the SAQ, due to direct disclosure to an interviewer. Interviewer effects being more pronounced in the FTFI and completely absent in the SAQ is documented as a pivotal influence in disclosure and over-/underreporting bias (Aquilino and Lo Sciuto, 1990; Catania et al., 1996; Mensch and Kandel, 1988; Tourangeau and Smith, 1996). Although Pienaar (2003) did not include the FTFI method in the study of self-disclosure, these results are in support of females' aversion to disclosure in SAQ's (Catania et al., 1986; Hansen and Schuldt, 1982; Johnson and DeLamater, 1976). Potential reasons for this response set are believed to be based on the design and implementation of the FTFI, and females' sensitivities to interviewer

characteristics. In this instance the interviewers were young student females, similar to the interviewees. (Catania et al., 1986; Cozby, 1973; Jourard and Richman, 1963; Shaffer, Smith and Tomarelli, 1982) found that interviewees tend to be more disclosing in FTFI's if their interviewer is similar in characteristics and hence perceived to be of similar interests and behaviour.

Previous studies (Aquilino, 1994; Aquilino and Lo Sciuto, 1990; Cannell and Fowler, 1963; Catania et al., 1990b, Gribble et al., 1999.) have indicated that underreporting and overreporting should be the most observable in FTFI's, however the results of this study is not in support of this trend. There does not seem to be convincing evidence of overreporting by the males and underreporting by the females on sensitive items, if conventional reporting trends are expected.

5.5 Social desirability bias respective to participant gender

Exploring the response patterns on the Marlowe-Crowne scale between the sexes revealed noteworthy findings contrary to commonly reported trends. The males scored highest on social desirability bias with the FTFI's, followed by the ICVI, and attained the lowest social desirability bias score on the SAQ (Table 4.17, page 33). These reporting differences were however found not to be significant (Table 4.18, page 34). The results indicated that males had the tendency toward the socially desirable response bias in the method that is the most amenable to interviewer effects and influence of response judgment as claimed by Catania et al. (1996, 1990b), Dindia and Allen, (1992), Hansen and Schuldt (1982), Tourangeau and Smith (1996) and Zenilman et. al (1978). This could be a direct result of interviewer effects, since the interviewers were young females, and

the males could have screened their responses to increase their congeniality. These results are not in support of postulation P₀₃.

The females strikingly have the opposite response trend to the males in the Marlowe-Crowne scale. They achieved lower social desirability bias scores on the FTFI than both the ICVI and the SAQ, the latter having had the highest social desirability bias score (Table 4.19). While the difference in response trends were not significant as evidenced in Table 4.20, it seemed that the females were not trusting of this method. This conception is further supported by their response patterns on self-disclosure where the women using the SAQ achieved the lowest self-disclosure score. Based on the SAQ design and implementation, it was speculated that perhaps the women were not convinced by its ability to provide absolute anonymity in contrast to claims by Gribble et al., (1999) Metzger et al., (2000) and Testa et al., (2005). The women utilizing the FTFI did not reveal a significant response bias of social desirability, which is congruent with their response pattern of self-disclosure. Reasons for this response trend could be that female respondents could more closely associate with the female interviewers and subsequently had little susceptibility to interviewer effects stemming from interviewer characteristics.

Female response trends in the Marlowe-Crowne scale questions the presence and degree of underreporting that is widely purported to be a factor in female self-report (Catania et al., 1996; 1990b; Dindia and Allen, 1992; Hansen and Schuldt, 1982; Tourangeau and Smith, 1996; Zenilman et. al.,1978).

If underreporting was of significant contribution to confounding facets in this study's self-report, one would expect the highest score on the Marlowe-Crowne scale and the lowest self-disclosure score for participants in the FTFI group. Clearly this was not the

case, and the female response trends did not provide substantial evidence of underreporting.

5.6 Measures of association and relationship between self-disclosure and social desirability bias

Testing for association between social desirability bias and self-disclosure indicated a very poor correlation at $r=0.182$, and was non-significant at $p=0.080$. If the Marlowe-Crowne scale is used as a validation tool for a co-administered survey questionnaire, there shouldn't be a high correlation between the Marlowe-Crowne scale scores and the focal survey (Crowne and Marlowe, 1960). This would mean that the items on the focal survey are not biased in a socially desirable manner, which is sought after. Evidently a very weak relationship existed between the Marlowe-Crowne scale and self-disclosure scale in this study and it can be deduced that due to the very low correlation that the items on the self-disclosure scale were not phrased as to provoke social desirability bias.

Although there seemed very little association between these two concepts, it has been postulated that performance on the Marlowe-Crowne scale can serve as an indicator of reporting bias on other measures of self-report (Crowne and Marlowe, 1964; 1960). In this study it was hypothesized that social desirability bias is associated with self-disclosure, presenting an inverse linear trend. This means that as mean social desirability bias increases, mean self-disclosure steadily decreases, based on the postulation that an individual who exhibits a great degree of social desirability bias by scoring highly on the Marlowe-Crowne scale will be less disclosing of sensitive and personal information that may be considered contra-normative.

Regression analysis on Table 4.22 (Page 53) however revealed that social desirability bias was not a very good predictor of self-disclosure with a coefficient of determination $R^2 = 0.009$, and a non-significant ANOVA of $p=0.358$ (Table 4.23). This lack of relationship is represented by Figure 4.2 on page 36 that illustrated the observed relationship between participants' social desirability bias and self-disclosure scores, with the best fitting linear and inverse linear regression lines plotted along the points. As there were clearly no linear or inverse linear relationship between social desirability bias and self-disclosure, there is no evidence to refute H_{03} that social desirability bias and self-disclosure are not associated. This was in support of the findings presented by Johnson and Fendrich (2004) who found the scale fallible in predicting social desirability bias independently. This signified that social desirability bias did not necessarily predict self-disclosure in this study, which does not provide support for the study by Gregson et al. (2002) wherein the contrary was presented.

On testing whether social desirability bias was a covariate to self-disclosure among the three methods, results presented in Table 4.24 refuted this hypothesis that social desirability bias was a mediator to self-disclosure. H_{04} was consequently not rejected at $\alpha=0.05$ with $p=0.355$. These final results revealed that participants' self-disclosure was independent to their scores of social desirability bias achieved on the Marlowe-Crowne scale. This is counterintuitive to self-report trends expected if participants are indeed less disclosing on sensitive topics due to social desirability bias as claimed by Aquilino and Lo Sciuto (1990), Catania et al. (1996, 1990b), Chavkin (2001), Jaggannathan (2001), Latkin and Vlahov (1998), Testa, Livingston and VanZile-Tamsen (2005), Weinhardt et al. (1998). One would expect a lower self-disclosure from a person that has indicated a greater tendency to social desirability bias, but results from this study

have provided no evidence of this reporting trend. The lack of conformity to the expected pattern may be explained by the differences in the three self-report methods in their respective advantages to self-disclosure. Figure 4.2 (page 53) illustrated the response trends respective to self-report method. The ICVI had several outliers of high self-disclosure and high social desirability bias as well, and similarly the FTFI displayed low self-disclosure and low social desirability bias on several cases. These may have served to mask the overall trends in analyses. So whilst in comparison with other methods there was a clear trend for the participants to be more disclosing in the ICVI and show less social desirability bias, there was no definitive pattern including all three methods and each in isolated analyses, which showed that greater social desirability bias will result in a person being less disclosing in any method. So a participant may show great social desirability bias and be very disclosing too. Literature suggests that interpretation of social desirability bias as measured by the Marlowe-Crowne scale is quite contentious (Leite and Beretvas, 2005), as it largely depends upon which statistical method is employed, which could undermine the original purpose of the scale. In addition, Johnson and Fendrich (2004) explained that the Marlowe-Crowne scale performs as designed when used as a validation tool, but they did not support the use of the scale as a predictor of self-disclosure. This was also seen in the study findings of Burhenne and Mirels (1970).

5.7 Conclusion

This study's findings were in support of Gregson's et al. (2002 and 2004) studies that illustrated increased self-disclosure in the ICVI as compared to the other methods. The

ICVI consistently demonstrated higher self-disclosure on sensitive items of sexual behaviour than the FTFI and the SAQ, and this was attributed to the advantageous design in combining the benefits of the FTFI with that of the SAQ. Its design and controlled implementation ensured that the participants understood the items and have the opportunity for clarification from the enumerator, whilst enjoying response anonymity. The greater efficacy of the ICVI was evidenced by the greater self-disclosure and reduced social desirability bias scores achieved in the Marlowe-Crowne scale, in conjunction with fewer refusals to participate and fewer response errors as witnessed by the FTFI and the SAQ.

Although the ICVI performed markedly better than the other self-report methods in self-disclosure, there was not much difference in the social desirability bias scores achieved among the three methods. This was not expected, and the reasons for such lack in the predictive value of the social desirability scores may have had more to do with the interpretation and content of the Marlowe-Crowne scale than the actual method of self-report. Literature has cautioned the use of the Marlowe-Crowne scale for purposes other than the validation of another survey questionnaire. This may have resulted in the inability to substantiate the premise that self-disclosure is inherently associated with social desirability bias as measured by the scale, or the premise itself may have been flawed in that the 2 concepts of disclosure and social desirability bias are actually not related and hence cannot be regressed.

Despite this lack of predictive ability in social desirability bias, this study concluded that the employment of ICVI fundamentally resulted in better quality data than the other methods of self-report on topics of sensitivity and controversial behaviours. It is submitted that the ICVI may be the better method in acquiring self-report data on

virtually all fields amenable to research, for a diversity of sample characteristics that includes rural illiterate populations as empirically established by Gregson et al. (2002 and 2004). The data collected by means of the ICVI could effectively meet its implementation targets and would be of greater quality to sufficiently assess intervention impact and successfully inform future intervention design.

5.8 Limitations and Recommendations

Participant performance in the ICVI and the FTFI may have been influenced by interviewer characteristics, since there were two interviewers of different race. This was not controlled for in the analyses, and although administration was standardized, there may have been subtle differences in the conduct of the interviews between the two interviewers. In addition, the fact that the researcher was an interviewer may have resulted in differential administration of the interviews, since she may have been more confident due to greater knowledge of the practice. This could also have resulted in self-report bias as participants may have been apprehensive in their responses due to familiarity with the researcher by sight on campus and being students in her undergraduate classes. Data collection by an independent research assistant who is not a student at the campus may have provided greater soundness to the data collection process.

The sample size of the current study was a limiting factor in successfully exploring any significance in performance among the three methods. A larger sample size may have exposed nuances in self-report such as gender or race differences in self-report where the respective effect sizes may have been too small to reveal any definitive trends. The relatively nominal sample size particular to each method of self-report also

undermined the power of the study, where a sample size of at least 250 is required to maintain a power of >85% for the levels of analyses that were performed. The projected sample size was compromised due to the high refusal rate in the FTFI and some refusals experienced in the SAQ, which would have increased the sample size and provided a greater level of statistical power in the study.

Gregson's et al. (2002) claimed that the ICVI is time consuming and requires additional training of skilled interviewers, as well limits the complexity of questionnaires. However, it is still maintained as the original argument made by Pienaar in the 2003 pilot of the ICVI, that the ICVI is no more time consuming than the SAQ, and in this study proved more time efficient than the FTFI. The claim that the method requires skilled interviewers and limits complexity in questionnaires is discredited, since regardless of the method, the level of skill required conducting any interview or data collection process is entirely dependant on the complexity of the questionnaire. A similar argument can be made for telephone interviews and especially computer assisted interviews. This claimed flaw is also necessarily associated with the sample characteristics and the context of implementation. The complexity in questionnaire design is not restricted to the method of self-report, since this would erroneously imply that SAQ's, telephone interviews, FTFI's, and all their derivatives are susceptible to the same pitfall. With appropriate skip-logic, clear and explicit instructions and guidance by an enumerator, the ICVI would perform just as well as the FTFI and decisively better than the SAQ in complex surveys. Furthermore, the ICVI is amenable to creative adaptation and innovative implementation strategies tailor-made to suit the target population, adding to its appeal in flexibility in design as a tactical tool in human science research.

While recent findings are promising, much more empirical support is needed to ensure the success and evolution of this promising technique in diverse research settings. Community outreach programmes, social networking systems and clinical trials can directly and timeously benefit from a method that enhances self-report to closely resemble the objective reality of the participants. In these domains where the efficacy of the intervention hinges on self-disclosure, the ICVI may provide the ideal standard of data collection. Although the understanding of the requirements and successful implementation of the ICVI is fairly limited, it is the potential tool to revolutionize self-report data collection by virtue of its multifaceted benefits in response to participants' needs.

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7. APPENDICES

Appendix 1: Participant Information sheet and consent form

Participant Information Form

Dear Participant

What are we researching?

Research investigates human behaviour in various ways. Personal information about health related behaviour is obtained from research participants in many different ways. The information from respondents enables health professionals and scientists to understand areas of concern and design appropriate intervention programs, counselling or support that would aid society and communities in general. This study is researching which method is best for obtaining personal information from people.

What do we expect from you?

The study would need your help in finding which survey procedure is more appropriate to obtain such sensitive information from respondents. Three methods would be employed, namely a face-to-face interview, self-administered questionnaire and a secret voting box method where your responses are kept confidential from the interviewer by placing the coloured cards signifying an answer into an appropriate slot in the voting box. The participants would be randomly allocated to either one of these methods, and participation will require approximately 30 minutes for completion of the respective questionnaires.

In each of these methods you would be assigned a survey identification number to protect your true identity from the researcher who would work with the data. Accordingly, your answers are kept confidential. The researcher will not know or have access to your names!

With your consent, upon completion of the study, the data will remain available for further research, but your identities will always remain anonymous. The findings of the study will only indicate which method was most favourable, and this information will be made available to academic personnel and the general public if it were published. I stress once again that your identity could in no way be associated with your responses and that your participation in the study will remain completely anonymous.

May you withdraw from the study?

Absolutely! Participation is completely voluntary and you may withdraw at any time without having to explain or give any reasons.

If you have any queries or would like more information on the topic, please contact Mr. Vernon Solomon on (033)-260 5682 or Jackie at 082 965 5098.

If you are happy and willing to participate in the study, please sign the attached consent form.

Thank you for your time.
JC Pienaar BSc.Hons. (Psychology).

RESEARCH CONSENT FORM

I have read the attached participant information form and understand the terms and conditions of participation, under the assurance of confidentiality of my identity and the information I provide, and that the researcher will not have access to my identity or be able to identify my responses in any way. I understand that the information I provide may be used for further research purposes at a later stage. I understand that my participation is voluntary and know that I can withdraw at any stage without having to provide any reasons.

Mode of self-report: SAQ ICVI Face-to-Face Interview

Mode of self-report is indicated here

Name _____

Signature _____ Date _____

Appendix 2: Marlowe-Crowne Scale of Social Desirability Bias and the Sexual Behaviour Questionnaire

Unique
PID

UZ 22F

**THE MARLOWE-CROWNE SCALE
Personal Reaction Inventory**

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false **as it pertains to you personally and tick the appropriate box.**

	True	False
1. Before voting I thoroughly investigate the qualifications of all the candidates.	<input type="checkbox"/>	<input type="checkbox"/>
2. I never hesitate to go out of my way to help someone in trouble.	<input type="checkbox"/>	<input type="checkbox"/>
3. It is sometimes hard for me to go on with my work if I am not encouraged.	<input type="checkbox"/>	<input type="checkbox"/>
4. I have never intensely disliked anyone.	<input type="checkbox"/>	<input type="checkbox"/>
5. On occasion I have had doubts about my ability to succeed in life.	<input type="checkbox"/>	<input type="checkbox"/>
6. I sometimes feel resentful when I don't get my way.	<input type="checkbox"/>	<input type="checkbox"/>
7. I am always careful about my manner of dress.	<input type="checkbox"/>	<input type="checkbox"/>
8. My table manners at home are as good as when I share meals with guests.	<input type="checkbox"/>	<input type="checkbox"/>
9. If I could take a cold drink from a shop without paying and be sure I was not seen, I would probably do it.	<input type="checkbox"/>	<input type="checkbox"/>



- | | True | False |
|--|--------------------------|--------------------------|
| 10. On a few occasions, I have given up doing something because I thought too little of my ability. | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. I like to gossip at times. | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. There have been times when I felt like rebelling against people in authority even though I knew they were right. | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. No matter who I'm talking to, I'm always a good listener. | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. I can remember "playing sick" to get out of something. | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. There have been occasions when I took advantage of someone. | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. I'm always willing to admit it when I make a mistake. | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. I always try to practice what I preach. | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. I don't find it particularly difficult to get along with loud mouthed, unpleasant people. | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. I sometimes try to get even with those people whom have wronged me, rather than forgive and forget. | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. When I don't know something I don't at all mind admitting it. | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. I am always friendly, even to people who are unpleasant. | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. At times I have really insisted on having things my own way. | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. There have been occasions when I felt like smashing things. | <input type="checkbox"/> | <input type="checkbox"/> |



24. I would never think of letting someone else be punished for my wrongdoings.

True **False**

25. I never resent being asked to return a favor.

26. I have never been annoyed when people expressed ideas very different from my own.

27. I have never lied to someone to get my way.

28. There have been times when I was quite jealous of the good fortune of others.

29. I have almost never felt the urge to criticise someone.

30. I am sometimes irritated by people who ask favors of me.

31. I have never felt that I was punished without cause.

32. I sometimes think when people have a misfortune they only got what they deserved.

33. I have never deliberately said something that hurt someone's feelings.

Participant Self-disclosure Questionnaire

Please complete the following questionnaire by ticking the appropriate box or by providing the relevant information in the space provided.

Survey ID No:

1. Age in years
2. Gender M/F
3. Race : **Indian** **White** **African** **Coloured**
4. Institution of study: **University** **Damelin** **Varsity College**
5. Intended Qualification/Degree/Diploma/Certificate:
6. Marital status (single **S**, married **M**, divorced **D**, widowed **W**)
7. Relationship status (if not married or single) ie Longterm (> one year)
Shortterm (<1 year)

-
1. What is your highest level of education? Grade 8-10 (standard 6-8)
Grade 11-12 (standard 9-10)
Higher than grade 12 (matric)
1st year tertiary education
2nd year tertiary education
3rd year tertiary education
Postgraduate
 2. Have you ever received formal education about general health and personal hygiene?
YES NO
 3. Do you make an effort to eat healthily? YES NO
 4. Do you make an effort to exercise? YES NO
 5. Do you consult a health-care professional about your health?
YES NO
 6. Have you ever consumed alcohol? YES NO

7. Do you currently consume alcohol? YES NO
8. Have you ever smoked cigarettes? YES NO
9. Do you currently smoke cigarettes? YES NO
10. Have you ever smoked dagga? YES NO
11. Do you currently smoke dagga? YES NO
12. Were you taught as a child about the consequences of alcohol or drug abuse?
YES NO
13. Are you aware of the consequences of alcohol and drug abuse?
YES NO
14. Have you ever received sexual education from your school, institution or parents?
YES NO
15. Are issues relating to sex freely discussed among members of your community?
YES NO
16. Does your community endorse sex education?
YES NO
17. Have you ever received education about the spread of HIV/AIDS?
YES NO
18. Does your community openly discuss HIV/AIDS?
YES NO
19. Are HIV positive people discriminated against in your community?
YES NO
20. Do you use condoms in your own sex life?
YES NO
21. Do you have problems obtaining condoms?
YES NO
22. Are you pressurized into using condoms?
YES NO
23. Are you pressurized into NOT using condoms?
YES NO

24. Are you comfortable with out-of-relationship sex, i.e. casual sex?
 YES NO
25. Have you had any additional partners whilst you were in a committed relationship? If yes, state number. NO
 YES, No. of additional partners
26. Have you ever had sex with a male or female prostitute (sex-worker)?
 YES NO
27. Have you ever exchanged or received money, drugs, goods or favours for sex?
 YES NO
28. Do you currently have more than one sexual partner?
 YES NO
29. Have you recently had sex with someone whose sexual history you don't know?
 YES NO
30. Have you ever been treated for Tuberculosis (TB)?
 YES NO
31. Have you ever been treated for a sexually transmitted disease (STD) e.g. syphilis, gonorrhoea, genital ulcer, "VD" or "drop"?
 YES NO
32. Do you believe you are at risk for HIV/AIDS?
 YES NO
33. What do you think your chances are for being HIV positive (very high/very low)?
 Very high Very low
34. Have you ever been tested for HIV?
 YES NO
35. Do you know your HIV status?
 YES NO
36. Do you regularly go for a HIV test?
 YES NO
37. Do you know your sexual partner's HIV status?
 YES NO
38. How old were you when you had sex for the first time?
 Age in years Not yet had sex
39. How many different sexual partners have you had in your lifetime?
 No. of different partners
40. How many different sexual partners have you had in the last 3 months?
 No. of different partners

41. How many partners have you had sex with in the last month?
No. of partners
42. How many times have you had sexual intercourse in the last 2 weeks, in total?
No. of times
43. On how many of these occasions did you use a condom?
Used condom no. of times
44. Is your current sexual partner a regular partner? By regular I mean someone you have been having sex with for six months or more.
YES NO
45. Do you think this person sometimes has sexual relations with other people?
YES NO
46. Do you masturbate? YES NO
47. Do you have or have you ever had anal sex **with a woman**?
YES NO
48. Do you have or have you ever had anal sex **with a man**?
YES NO