

**PREDICTING
SEXUAL SENSATION SEEKING:
THE THIRD VARIABLE EFFECT OF
TIME SPENT ON THE INTERNET**

by

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DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the authorship owner thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

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ABSTRACT

The most commonly searched for topic on the internet revolve around sexuality. These searches, known as online sexual pursuits, may be influenced by one's personality traits, such as sexual sensation seeking (Kalichman *et al.*, 1994), which has been associated with various sexual risk behaviours and could increase one's chances of contracting sexually transmitted diseases and infections. It is therefore vital for researchers to examine the association between sexual sensation seeking and the internet.

This study collected data from 336 participants who responded to instruments on an online survey which consisted of a demographic questionnaire, the Sexual Sensation Seeking Scale (Kalichman *et al.*, 1994), the Sexual Compulsivity Scale (Kalichman & Rompa, 1995), the Big Five Inventory (John, Naumann, & Soto, 2008), the Real Me Questionnaire (Amichai-Hamburger, Wainapel, & Fox, 2002), Klein's Sexual Orientation Grid (Klein, 1993), and items associated with sexual risk behaviour (Mashegoane, Moalusi, Ngoepe, & Peltzer, 2002), online deception (Capri & Gorski, 2006; Stieger, Eichinger, & Honeder, 2009), and internet use. Results from multiple regression analyses indicated that extraversion, agreeableness, conscientiousness, neuroticism, sexual compulsivity, sexual risk behaviour, and online self-disclosure were statistically significant ($p < .05$) predictors of sexual sensation seeking.

The study used product-term regression analysis to examine the influence that time spent on the internet has on sexual sensation seeking and its relationship with the statistical predictors thereof. Three distinct third variables were used, namely, hours spent on the internet for work purpose (work hours), hours spent on the internet associated with online sexual pursuits (sexual

hours), and hours spent on the internet for personal purposes (personal hours). Through the use of product-term regression analyses I was able to show that work hours as a third variable moderated the relationship between extraversion and sexual sensation seeking; work hours indirectly influenced sexual sensation seeking through sexual compulsivity; and that work hours as a third variable moderated the relationship between online self-disclosure and sexual sensation seeking. Furthermore, sexual hours as a third variable moderated the relationship between sexual compulsivity and sexual sensation seeking. Finally, I have shown that, within the sample, personal hours as a third variable moderated the relationship between sexual compulsivity and sexual sensation seeking; personal hours indirectly influenced sexual sensation seeking through sexual risk behaviour; and personal hours indirectly influenced sexual sensation seeking through online self-disclosure.

It thus seems that time spent online influences sexual sensation seeking. It is advised that internet use policies be put in place to establish and maintain a professional culture within the workplace, and to ensure that job performance is consistently met. Internet software packages may be used to identify and report unauthorized online activity, and monitor hours spent online in order to identify individuals who may require treatment with regards to problematic internet use, sexual compulsivity, and inappropriate sexual behaviour in the workplace. Furthermore, the results of this study highlight the internet's influence on the relationship between sexual compulsivity and sexual sensation seeking, and as such, may be of interest to sex therapists and counsellors in the field of hypersexuality. Finally, corporations, university officials, and youth and sexual health organisations may want to create awareness and provide educational resources with regards to the health risks associated with exploring sexuality via the internet.

OPSOMMING

Temas wat rondom seksualiteit gefokus is, is die mees algemeenste onderwerp wat op die internet nagevors word. Hierdie internet soeke, naamlik aanlyn seksuele strewe, word deels beïnvloed deur persoonlikheids-eienskappe, soos seksuele sensasiesoeke. Verder, seksuele sensasiesoeke is geassosieer met 'n wye reeks riskante seksuele gedrag en kan die kans tot seksueel oordraagbare siektes en infeksies verhoog. Hieruit volg dus die noodsaaklikheid dat navorsers die assosiasie moet ondersoek tussen seksuele sensasiesoeke en die internet.

In 'n aanlyn-opname is data van 336 respondente versamel deur die gebruik van instrumente soos 'n demografiese vraelys, Seksuele Sensasiesoekende Skaal (Kalichman et al., 1994), Seksuele Kompulsiwiteit Skaal (Kalichman & Rompa, 1995), Groot-Vyf Inventaris (John, Naumann, & Soto, 2008), Ware Ek Vraelys (Amichai-Humburger, Wainapel, & Fox, 2002), Klein se Seksuele Oriëntasie Rooster (Klein, 1993), en items wat verband hou met riskante seksuele gedrag (Mashegoane, Moalusi, Ngoepe, & Peltzer, 2002), aanlynmisleiding (Capri & Gorski, 2006; Stieger, Eichinger, & Honeder, 2009), en internetgebruik. Resultate van 'n meervoudige regressie-analise het aangedui dat ekstraversie, pligsgetrouheid, welgevalligheid, neurotisme, seksuele kompulsiwiteit, riskante seksuele gedrag, en aanlyn self bekendmaking statisties beduidende ($p < .05$) voorspellers van seksuele sensasiesoeke is.

Hierdie studie het produk-term regressie-analise (toets vir interaksie met behulp van meervoudige regressie) gebruik om die derde veranderlik van tyd wat op die internet gespandeer word te analiseer met betrekking tot die verhouding tussen seksuele sensasiesoeke en die statistiese voorspellers van seksuele sensasiesoek. Die derde veranderlike bestaan uit drie

verskillende kategorieë naamlik, ure wat aanlyn gespandeer is vir werksdoeleindes (werksure), ure wat op die internet gespandeer is wat verband hou met aanlyn seksuele strewe (seksuele ure), en ure wat aanlyn vir persoonlike doeleindes gespandeer is (persoonlike ure). Resultate dui daarop neer dat werksure die verhouding tussen ekstraversie en seksuele sensasiesoeke gemodereer het, werksure het seksuele sensasiesoeke indirek beïnvloed deur seksuele kompulsiwiteit, en dat werksure die verhouding tussen aanlyn selfbekendmaking en seksuele sensasiesoeke gemodereer het. Verder het seksuele ure die verhouding tussen seksuele kompulsiwiteit en seksuele sensasiesoeke gemodereer. Persoonlike ure het die verhouding tussen seksuele kompulsiwiteit en seksuele sensasiesoeke gemodereer, persoonlike ure het seksuele sensasiesoeke indirek beïnvloed deur riskante seksuele gedrag, en persoonlike ure het seksuele sensasiesoeke indirek beïnvloed deur aanlyn selfbekendmaking.

Dit blyk derhalwe dat die tyd wat op die internet gespandeer word het 'n invloed op seksuele sensasiesoeke. Daar word voorgestel dat beperkende beleidsriglyne binne internetgeledere ingestel word ten einde 'n professionele kultuur binne die werkplek te verseker. Internet-programme kan gebruik word om ongemagtigde internet-aktiwiteit te identifiseer en aan te meld, aanlyntyd te kontroleer en persone te identifiseer vir moontlike behandeling vir internetverwante probleme, seksuele kompulsiwiteit en ontoepaslike seksuele gedrag binne die werkplek. Voorts fokus hierdie studie op die invloed van die internet met betrekking tot die verhouding tussen seksuele kompulsiwiteit en seksuele sensasiesoeke, en kan van beduidende belang wees vir seksterapeute en beraders wat spesialiseer in die veld van hiperseksualiteit. Ten slotte skep hierdie studie 'n platform vir organisasies, universiteite, jeug- en seksuele gesondheidsorganisasies om bewustheid en programme te bevorder wat die gesondheids-risiko's aanspreek wat verband hou met seksuele strewe op die internet.

DEDICATION

To God

“All things come from You and of Your own do we give You.”

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बाप, आपकी अनुपस्थिति में मैंने बहुत कुछ सीखा है.

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CHAPTER 1

INTRODUCTION

Between 2000 and 2012, the internet grew exponentially by approximately 566% and currently, more than 2.4 billion people worldwide are active internet users (Internet World Stats, 2012). Although South Africa has less than a 0.5% stake in terms of total world internet users, the 8.5 million South African internet users comprises of 17% of the country's population (Internet World Stats, 2012; World Wide Worx, 2012). As a result of its constant growth, the internet has become a vital aspect of our daily lives, influencing interpersonal relationships (Balkan & Adalier, 2011), occupation (Wallace, 2004), education (Anderson, Boyles, Rainie, & Pew Internet & American Life, 2012), recreation (Whitty & McLaughlin, 2007) and communication (Bellanca & Stirling, 2011).

With instant access to a myriad of information, there is no doubt that the internet is an essential tool in the 21st century. It is worth noting that matters revolving around human sexuality have been identified as the most searched for topic online (Ross, Mansson, Daneback & Tikkanen, 2005) and as such, the internet has been used as a platform for sexual pursuits (Cooper, Putnam, Planchon, & Boies, 1999a; Cooper, Scherer, Boies, & Gordon, 1999b). These pursuits may pertain to sexual education, pornography, erotica, sexual fetishism and sexual exploration and expression of oneself, all of which are a few mouse clicks away (Perry, Accordino & Hewes, 2007; Ross *et al.*, 2005; Tikkanen & Ross, 2000).

Whatever one's reason may be for using the internet, online behaviour is said to be influenced by one's personality (Amichai-Hamburger, 2002). Sensation seeking is a personality

trait which may influence an individual's desire to engage in novel experiences (Zuckerman, 1994). As a result, sensation seekers may turn to the internet, since many online platforms offer anonymity, in search of novel experiences in order to express and explore desires which may be deemed socially unconventional and/or unacceptable. Although we, as South Africans, live in a democratic and progressive country, social norms and conventions do exist and as a result, we create personas in order to live harmoniously according to social norms. Over time one may create various public and private personas to please others due to these social roles and norms that society places on one (Carducci, 2009). One may choose to create an online persona, which may become a substitute for one's true self (McKenna, Green, & Gleason, 2002), in order to experience and experiment under conditions of online anonymity (Ross, 2005). On the other hand the opposite may also be true; one's true self may be expressed to other internet users in a social online world (cyberspace).

Media is inherently social in nature and as social beings we have been, and continue to be, influenced by media in various aspects of our lives whether it is personal, public, private, political, sexual, educational, or simply for entertainment value. Due to the readily available sexual information and communication online, conditions of online anonymity may create the opportunity for the exploration of sexual identities that do not comply with societal norms.

1.1 Research Rationale

The use of the internet for sexual pursuits is easily accessible to anyone who has an internet connection. Individuals who frequently use the internet for educational, occupational, personal, or entertainment purposes may be influenced by what they encounter online, which

may result in the exploration and experimentation with sexual identities through online personas. Furthermore, those using online platforms to explore their sexuality may actively browse the internet in search of offline sexual activities. These online sexual pursuits which might progress to offline real-world sexual situations may present a risk in terms of sexual health, in the form of casual sex with multiple partners, unprotected sexual intercourse, sexually transmitted disease and infections, and unwanted pregnancy.

In order to address risk associated with internet use, I aimed to identify the significant predictors of sexual sensation seeking. Additionally, I questioned whether frequency of internet use influenced the relationship between sexual sensation seeking and the identified statistical predictors of sexual sensation seeking. By determining the significant predictors of sexual sensation seeking, the results yielded from the research may be of interest to university officials, youth organisations, human resource personnel, and sex therapists and sexual health organisations, in the aim of creating awareness with regards to sexual risk behaviours and internet use. As a result, interventions may be created to educate individuals with regards to sexual sensation seeking, sexual risk behaviour and internet use.

1.2 Research Objectives

The research was conducted in order to answer the following question: What are the statistical predictors of sexual sensation seeking and does time online, as a third variable, affect the relationship between sexual sensation seeking and the predictors thereof? In order to answer the research question, three broad objectives were outlined: (1) identify predictors of sexual sensation seeking related to sexual risk behaviour, based on the literature; (2) examine the

identified predictors of sexual sensation seeking for statistical significance; and (3) explore the third variable effect that the amount of internet hours per day has on the relationship between sexual sensation seeking and the statistically significant predictors of sexual sensation seeking. Based on the literature, the potential predictors influencing sexual sensation seeking are listed as the following: sexual compulsivity; number of sexual partners; substance use; internet anonymity and online self-disclosure; sexuality; personality traits; and online deception (Fisher & Misovich, 1990; Horvath & Zuckerman, 1993; Kalichman *et al.*, 1994; Parson, Bimbi, & Halkitis, 2001).

1.3 Significance of Research

Amichai-Humburger (2002) suggests that research associated with online behaviour should consider the role that various personality traits play in terms of human behaviour. Although there is an extensive body of literature that explores the notion of sexual risk behaviour and internet use, research in the field of sexual sensation seeking and internet use is limited and predominantly conducted among HIV-at-risk groups. As such, I attempted to contribute to the growing body of literature by identifying the statistical predictors of sexual sensation seeking. Furthermore, I attempted to examine how the internet influences the relationship between sexual sensation seeking and its statistical predictors. Not only did I contribute to the literature but I have attempted to expand on previous research too. As such, I explored three categories of time associated with internet use, namely; daily internet hours associated with work purposes, daily internet hours dedicated to sexual pursuits, and daily internet hours associated with personal use. By evaluating the role that these hours play in the relationship between the statistical predictors and sexual sensation seeking; a fuller understanding may be gained in terms of the internet's influence on one's personality.

1.4 Brief Chapter Overview

Chapter 2 provides the theoretical background associated with the historical and important research findings in the field of sexual sensation seeking. The chapter is presented in two parts. The first part provides a brief historical foundation of sensation seeking, in order to introduce the concept of sexual sensation seeking as a biopsychological personality trait. Thereafter, the review continues to highlight research related to personality traits and sexual risk; such as sexual compulsivity, extraversion, agreeableness, neuroticism, conscientiousness and openness to experience. Other non-personality trait variables, associated with sexual sensation seeking and sexual risk behaviour, are discussed. In order to establish a link between the third research objective and internet use, personality traits and sexual risk behaviour; the review continues by introducing the notion of online sexual pursuits and its associations with sexual sensation seeking and sexual risk behaviour. Furthermore, the review identifies variables such as online self-disclosure, online deception, and sexual orientation, and outlines its associations with time spent online. Chapter 2 concludes with a discussion of the theoretical framework, in which this study is grounded.

Chapter 3 provides a detailed discussion about the research methods employed in this study. The chapter starts with an outline of the strategy used, such as the procedure followed during the data collection phase. The chapter provides a list of all instruments which were used during the study and concludes with a description and summary of the statistical methods employed to analyse the data.

Chapter 4 presents the results of the study starting with a demographic and behavioural description of the sample. Thereafter, the results associated with the multiple regression analysis are reported. Product-term regression results are presented in order to identify the third variable effect that the three categories of time had on the relationship between sexual sensation seeking and each statistical predictor variable. An overall summary of the product-term regression analyses concludes the chapter in tabulated form.

Chapter 5 discusses the key findings of the research. Thereafter, a contextualized argument is presented with regards to the significant findings obtained from the multiple regression and product-term regression analyses, in light of the theoretical framework. The chapter concludes by discussing the implication of the findings, and addresses the limitations associated with the research strategy used. Future recommendations are suggested.

CHAPTER 2

LITERATURE REVIEW

2.1 *Personality Traits, Sexual Risk Behaviour and the Internet*

During the past thirteen years, the number of South African citizens living with HIV has increased each year. According to population estimates reported by the Human Science Research Council, in 2008, 10.6% of the South African population lived with HIV (van der Linde, 2012). Although awareness campaigns have been created and preventative measures were put in place to decrease the HIV/AIDS prevalence rates, prevention efforts are failing as indicated by the 6.4 million South African citizens (12.3% of the population) who were living with the virus in 2012 (van der Linde, 2012).

Research conducted amongst South African citizens has identified sexual risk factors that, when present, may increase one's likelihood of contracting life threatening venereal diseases and infections. These factors include: unprotected sex; multiple sex partners; substance use; gender and sexuality; and personality traits (Browne, Wechsberg, Bowling, & Luseno, 2012; Chandran *et al.*, 2012; Kalichman, Cherry, Cain, Pope, & Kalichman, 2005; Kalichman, Simbayi, Jooste, & Cain, 2007; Kaufman, Shefer, Crawford, Simbayi, & Kalichman, 2008; Knox, Yi, Reddy, Maimane, & Sandfort, 2010; Olley, Seedat, Gxamza, Reuter, & Stein, 2005; Pitpitan *et al.*, 2012; Wechsberg *et al.*, 2010; Wong, Huang, DiGangi, Thompson, & Smith, 2008).

It has been said that the way we react to stimuli emotionally, cognitively and behaviourally is largely due to our personalities (Amichai-Hamburger, 2002). The link between personality and

sexual risk behaviour has been the focus of researchers in the past (e.g., Eysenck, 1971; 1976) and an extensive body of literature has explored the relationship between personality traits and sexual risk factors (for a review see Hoyle, Fejfar, & Miller, 2000). One of the most researched personality traits is sensation seeking and has been defined as the desire to seek out new, diverse, and strong feelings and experiences, and the acceptance of any risk that may result from these experiences (Kalichman *et al.*, 1994). Furthermore, the trait has been positively correlated with sexual risk factors related to behaviour (Kalichman & Rompa, 1995). Although many have attempted to determine the factors that predict sensation seeking (Zuckerman, 1994), researchers have only recently begun to explore the personality traits' application within a cyber-environment.

The internet allows individuals to explore the unfamiliar online, in a cyber-environment. These online cyber-environments may affect an individuals' behaviour. Cooper (2002) is of the opinion that the Triple-A-Engine, which consists of three factors, contributes to and influences internet behaviour associated with online recreation, entertainment, education, or support in terms of sexual stimulation (Cooper, Scherer, Boies, & Gordon, 1999b). These three factors are Accessibility, Affordability and Anonymity (Triple-A-Engine). When conditions of anonymity are present, one may actively choose to present the self through the use of a created online persona. The opposite may be true as well, when conditions of anonymity are present, one's public persona may be abandoned and replaced by one's true self, online. Additionally, it is believed that the internet user may choose to present the self through binary characteristics (Hertlein & Sendak, 2007). These include, among other things, online anonymity or self-disclosure, as well as online deception. Anonymous internet use may lead to cathartic self-disclosure during internet mediated communication (Hertlein & Sendak, 2007). As a result, the

internet can become a platform to express one's various (potentially hidden) personas in a cyber-environment. Even though social decorum or convention deems public displays of sexual behaviour as a taboo, one could possibly find acceptance through the virtual world offered by the internet. It has been suggested that when online communication takes place under conditions of anonymity, individuals tend to spend more time engaging in sexually compulsive behaviour (Stern & Handel, 2001), which may lead to an increase in both online and offline sensation seeking. As a result, various authors have come to the conclusion that personality factors associated with sexuality may be important when researching HIV-risk behaviour (Bancroft *et al.*, 2004).

The literature review which follows, attempts to outline a brief historical foundation of sensation seeking as a biopsychological personality trait. Thereafter, in relation to the first research objective, it highlights possible predictors of sexual sensation seeking associated with sexual risk behaviour in an offline, real-world context. In order to introduce the third research objective, the literature review explores the notion of online sexual sensation seeking, i.e. research in which the concept of sexual sensation seeking has been applied to online, cyber-environments. This has been done to investigate the third variable effect that the amount of time spent on the internet has on the relationship between sexual sensation seeking and the statistically significant predictors of sexual sensation seeking.

2.1.1 Sensation Seeking

Zuckerman (1994) regards sensation seeking as a personality trait based on biological and behavioural correlates, and defined it as a desire to seek out new, diverse, and strong feelings and

experiences, and the acceptance of any risk that may result from these desired feelings and experiences. The latter part of the definition claims that sensation seekers are prepared to accept risks that may pertain to the individual's physical form, such as bodily harm; risks that may stem from an individual's social environment, such as being stigmatized by others; legal risks which may involve a disregard of constitutional law resulting in punitive measures; and a loss of financial income or a portion of one's financial capital (Zuckerman, 1994). Based on the definition, it is clear that an individual engaging in sensation seeking behaviour does so primarily for the desired stimulating experience, regardless of potential risky consequences that may follow. As such, the personality trait has been and continues to be a vital research area in health risk research with regards to the increasing awareness and preventative interventions associated with HIV and AIDS incidence, as well as other sexually transmitted infections and diseases.

Zuckerman's first sensation seeking hypothesis can be traced to the 1960s, during his work in the area of sensory deprivation (Zuckerman, Kolin, Price, & Zoob, 1964). He initially claimed that individuals differed based on an optimal level of stimulation and arousal which was measured through the use of a self-administered questionnaire. This led Zuckerman to publish his first theoretical statement on sensation seeking in 1969. According to the theory of optimal level of stimulation, first proposed by Wilhelm Wundt in 1873 (cited in Zuckerman, 1994); affective responses were based on the intensity of sensation, and resulted in feelings of pleasure or displeasure. Subsequently, Zuckerman theorized that sensation seeking revolved around an individual's desire to increase their level of stimulation by engaging in novel human activities, and in doing so, increase their level of arousal. As research increased in the field of optimal-level theory, Zuckerman rejected his initial sensation seeking hypothesis which was rooted in the optimal level of stimulation and arousal theory, regarding it as a secondary function due to the

biochemical findings which ultimately advanced Zuckerman's theoretical concept toward a psychobiological model (see Zuckerman, 1979). In light of emerging research during the time, Zuckerman claimed that sensation seekers were physiologically sensitive with regards to the brain's catecholamine systems and enzymes, which affected an individual's cortical centres, resulting in arousal (Zuckerman, 1994). As a result, sensation seeking as a personality trait shifted from being a primarily psychological concept to an interrelated relationship between both the psychological and physiological aspects.

In order to measure an individual's sensation seeking personality trait, a self-administered questionnaire, known as the Sensation Seeking Scale, was developed (Zuckerman, 1994). Zuckerman (1994) initially based the definition of sensation seeking on the scale's items and later modified it due to research that correlated scale scores to "behaviour, reported behaviour, expectations, anticipations, and risk appraisals" (p. 26). The Sensation Seeking Scale is regarded as the fundamental method to identify whether an individual is a high or low sensation seeker and consists of four factors, namely thrill and adventure seeking, experience seeking, disinhibition, and boredom susceptibility (Zuckerman, 1994). The first factor, thrill and adventure seeking, relates to an individual's intention to seek out and participate in activities that may pose a physical risk, such as bungee jumping, paragliding, shark cage diving, etcetera. Experience seeking involves the desire for new and arousing sensations that may be experienced through one's thought structures and bodily senses, as well as one's association to non-conventional group norms, such as travel and tourism, artistic expression, and group association to homosexuals, wiccans, etcetera. The third factor, disinhibition, relates to an individual's desire to engage in a social setting and may or may not involve unlawful or unconventional activities, such as recreational substance use, varied sexual encounters, etcetera. The fourth and final factor

related to the sensation seeking construct is boredom susceptibility, which involves one's dislike or inability to tolerate the mundane and repetitive. Although it seems as if risk-taking is a prerequisite for sensation seeking, especially when referring to the construct's definition and the activities that relate to the above mentioned factors, it is not.

Sexual risk behaviour associated with sensation seeking has been extensively researched (Bancroft *et al.*, 2003; Chandra, Krishna, Benegal, & Ramakrishna, 2003; Hoyle, Stephanson, Palmgreen, Lorch, & Donohew, 2002; Kalichman, Cain, Zweben, & Swain, 2003; Zuckerman, 1979). One of the most commonly identified risk factors relates to the number of sex partners that one has had in the past, which has been positively associated with sensation seeking (Fisher & Misovich, 1990). High sensation seekers are likely more inclined to experiment sexually, as well as engage in intercourse with more people, compared to low sensation seekers (Zuckerman, 1994). The work of Fisher and Misovich (1990) reveals that sensation seekers may be regarded as a high-risk group for sexually transmitted infections and diseases, due to their tendency to engage in intercourse with a greater number of partners and little concern for sexual health risks associated with promiscuous behaviour.

According to Zuckerman's sensation seeking theory (1994), an individual anticipates the incentive that results from the sensation or experience solely. Any consequence or risk that may result from the sensation seeking behaviour is the price that the individual is willing to pay, and is thus secondary. On the other hand, Zuckerman claims that most high sensation seekers attempt to minimize the associated risk, with the exception of antisocial individuals. Additionally, high sensation seekers may experience the anticipation of pleasure more intensely than others. Therefore, it is believed that low sensation seekers who regard sensation-seeking activities as

risky will either take measures to lessen the risk or avoid the activity, which may primarily be due to their lesser need for immediate stimulation. One could go as far as to say that a higher propensity to seek out sensation is a result of an anticipation and desire of the immediate reward, whether or not the behaviour is perceived as high or low in risk. With regards to sexual sensation seeking, the risks involved, such as sexually transmitted infections or disease, are not immediately apparent after engaging in sexual risk behaviour. As such, it is believed that high sensation seekers are driven by short-term, immediate stimulation or benefits (Cooper, Wood, Orcutt, & Albino, 2003), compared to low sensation seekers who are not as eager to engage in stimulating activities (Horvath & Zuckerman, 1993).

Other predictive factors associated with sensation seeking include risk appraisal and peer influences (Horvath & Zuckerman, 1993). If the risk is perceived as high, the individual may be less inclined to engage in the act of sensation seeking. Additionally, high sensation seekers tend to be drawn to peer groups characterized as less conservative and sexually liberal; preferring the company of like-minded individuals who share interests which may advance their sensation seeking tendencies to participate in activities such as sexual risk behaviours. As a result of these attitudes and behaviours, high sensation seekers may receive positive reinforcement for their sensation seeking behaviour from peers. In line with this school of thought, Zuckerman points out that sensation seekers have a tendency to seek out varied sexual experiences with a variety of sexual partners and despite the risk involved; high sensation seekers may have more sexual partners than low sensation seekers. Kalichman *et al.* (1994) claims that sensation seeking plays a possible mediating role in terms of predicting HIV infection. As a result, attitudinal and behavioural factors such as sexual permissiveness, may predict sensation seeking within a social and sexual context.

2.1.2 Sexual Sensation Seeking

In order to address the sexual dimension of sensation seeking, Kalichman *et al.* (1994) designed the sexual sensation seeking scale based on Marvin Zuckerman's sensation seeking scale. The sexual sensation seeking scale's items revolve around, and measures, sensation seeking tendencies that pertain to sexual attitudes and sexual risk behaviour. Sexual sensation seeking has thus been defined as a tendency to participate in risky, exploratory and sexually exciting behaviour in order to achieve a level of satisfaction (Kalichman *et al.*, 1994).

Kalichman *et al.* (1994) initially set out to test the scale's ability to predict behaviour related to AIDS-risk by employing a sample of 106 homosexual men between the ages of 18 and 68 years ($M = 33.67$ years, $SD = 10.58$). A reliability coefficient of .75 was reported, as measured by Cronbach's alpha. The study demonstrated the scale's temporal stability ($\alpha = .78$), measured by a subset of the sample (36 men) after two weeks of the initial testing. Results indicated that the sexual sensation seeking scale significantly correlated with participant's engagement in unprotected anal sex, number of sex partners, alcohol use, sexual control and experience seeking. In order to differentiate between risk behaviour, the sample was divided into two groups. The high-risk group consisted of men who reported unprotected anal intercourse during the previous 3 months ($n = 38$) and the low-risk group comprised of men who did not report engaging in such sexual behaviour during the same timeframe ($n = 53$). After comparing the two groups, results indicated that the high-risk group had a higher propensity for drug and alcohol use during the previous three months, which correlated with higher sexual sensation seeking scale scores. Based on this study, the researchers claimed that sexual sensation seeking plays a mediating role with

regards to sexual risk of infection for the human immunodeficiency virus (Kalichman *et al.*, 1994), at least among self-identified homosexual men.

Replicating Kalichman *et al.*'s (1994) initial study and extending it to analyse the sexual sensation seeking scale's generalizability to other populations, Kalichman and Rompa (1995) conducted two studies, one of which utilized a heterosexual sample. Their first study, as mentioned, replicated the initial sexual sensation seeking scale's study in terms of employing self-identified gay and bisexual men ($n = 296$) between the ages of 18 and 82 years ($M = 33.6$, $SD = 10.9$). As with the Kalichman *et al.* (1994) study, acceptable reliability was reported ($\alpha = .79$), as well as significant correlations between sexual sensation seeking and drug use before sex, alcohol use before sex, number of sexual partners, unprotected intercourse, and sexual compulsivity.

Kalichman and Rompa's (1995) second study was conducted among inner city African American men ($n = 60$) and women ($n = 98$) ranging from the ages of 20 to 65 years ($M = 35.1$, $SD = 9.1$). The majority (62%) of the sample engaged in sexual risk behaviour as measured by unprotected vaginal sex and 11% reported engaging in unprotected vaginal sex during the past three months. Furthermore, only 34.6% reported using condoms occasionally during sex. During the three months prior to the study 56% of men and 23% of women had multiple sex partners of two or more. Other forms of sexual risk behaviour included sharing needles associated with drug use (24%), being involved with a sexual partner that used needles associated with drug use (41%), as well as alcohol (51%) and drug use (42%) during the past 3 months. With regards to sexually transmitted disease and infections, 53% reported having had an STD, 73% were tested negative for HIV antibodies, 3% were tested positive for the HIV antibodies, and 19% were

unsure about their HIV status. These studies confirm that the sexual sensation seeking scale is reliable ($\alpha = .81$) among gay men (Kalichman *et al.*, 1994; Kalichman & Rompa, 1995) and inner city men and women (Kalichman & Rompa, 1995). As a result, both studies conducted by Kalichman and Rompa (1995) supports the initial proposal that the sexual sensation seeking scale predicts risk behaviour for sexually transmitted diseases and infections.

Elaborating on a theoretical model which considered sexual sensation seeking, alcohol expectancies and drinking before sex as predictor variables associated with HIV risk (Kalichman, Tannenbaum, & Nachimso, 1998); Hendershot, Stoner, George, and Norris (2007) recruited participants who met the following criteria: romantically interested in members of the opposite sex; recently consumed alcohol; between the age range of 21 to 35 years; as well as not being in a committed relationship. The sample comprised of 611 heterosexual young adults (49.4% female; $M_{age} = 25.2$ years, $SD = 3.9$) and reported that sexual sensation seeking predicted HIV-risk behaviour both directly by means of alcohol expectancies and indirectly by means of alcohol consumption prior to sex. Furthermore, although not observed previously (in Kalichman & Cain, 2004; Kalichman *et al.*, 2003); the direct effect reported between sexual sensation seeking and alcohol consumption prior to sex has found support using a larger sample size (Kalichman, Simbayi, Jooste, Cain, & Cherry, 2006).

Substance use and sexual risk behaviour is highly prevalent in South Africa (Kalichman *et al.*, 2007; Luseno, Wechsberg, Kline, & Ellerson, 2010; Olley *et al.*, 2005; Wechsberg *et al.*, 2008). Mashegoane, Moalusi, Ngoepe and Peltzer (2002) reported that in their sample of 308 South African college students, 20.7% consumed alcohol prior to sex. Additionally, sexual sensation seeking was significantly associated with having more than one sex partner during the

past three and twelve months for men, as well as having sexual intercourse under the influence of alcohol for both sexes. Many studies have reported associations between sexual sensation seeking and sexual risk behaviour, however, the majority of these studies are conducted among men, homosexuals and college students, which are believed to be high-risk population groups (Gaither & Sellbom, 2003; Gullette & Lyons, 2005; Hart, Wolitski, Purcell, Gómez, & Halkitis, 2003; Kalichman *et al.*, 1994; Kalichman & Rompa, 1995; Maisto, Carey, Carey, Gordo, & Schum, 2004; Monks, Tomaka, Palacios, & Thompson, 2010).

In order to address the gap in the literature a longitudinal study was conducted among African American female participants, which examined the association between sexually transmitted infection-related risk behaviours and sexual sensation seeking (Voisin, Tan, & DiClemente, 2013). The sample consisted of 715 participants between the age of 15 and 21 years ($M = 17.8$, $SD = 1.7$). The independent effects of sexual sensation seeking on sexual risk behaviour outcomes are reported for the entire 12 months¹: age and number of lifetime sex partners, peer norms and number of lifetime sex partners, as well as sexual sensation seeking and number of lifetime sex partners. After controlling for independent effects, higher sexual sensation seeking scale scores predicted more lifetime sexual partners. These findings support the notion that high sexual sensation seeking scores may be longitudinally predictive of HIV risk factors, such as number of lifetime sex partners.

Sexual sensation seeking as a personality trait thus plays an important role with regards to sexual risk behaviour associated with HIV and other venereal diseases and infections. It is clear

¹ Participants were randomly assigned into two groups; 49% ($n = 348$) formed part of the STI/HIV Intervention group and 51% ($n = 367$) were included in an intervention which provided an enhanced standard of care. All generalized estimating equation models controlled for intervention effects.

that high sensation seekers are more likely to participate in casual sex, engage in unprotected intercourse, have a greater number of sexual partners, and are more likely to use substances prior to and during sexual intercourse, compared to low sensation seekers. However, as per the definition, sensation seekers are driven by the immediate reward of sexual excitement and pleasure. With regards to this, some sensation seekers experience the anticipation of sexual pleasure more intensely than others. The intensity could be associated with hypersexuality, a character of sexual compulsivity which, like sexual sensation seeking, is correlated to sexual risk behaviour (Kalichman *et al.*, 1994; Satinsky *et al.*, 2008).

2.1.3 Sexual Compulsivity

Described as a type of hypersexuality which may yield negative consequences (Kingston & Firestone, 2008; Satinsky *et al.*, 2008), and conceptualized by Kalichman and Rompa as “an insistent, repetitive, intrusive, and unwanted urge to perform specific acts often in ritualized or routinized fashions” (1995, 587); sexual compulsivity has been highlighted as a key predictive factor associated with sexual risk and HIV infection (Benotsch, Kalichman, & Kelly, 1999; Kalichman, Greenberg, & Abel, 1997; Kalichman *et al.*, 1994; Kalichman & Rompa, 1995; Kalichman & Rompa, 2001; Reece, Plate, & Daughtry, 2001). Individuals who are sexually compulsive are characterized by uninhibited attitudes and behaviours of a sexual nature (Dodge *et al.*, 2008; Kalichman & Rompa, 1995; McBride, Reece, & Sanders, 2008). As a result of this sexual preoccupation and lack of sexual control, it has been reported that sexual compulsivity is associated with high levels of sexual sensation seeking (Parsons, Bimbi, & Halkitis, 2001).

As with the sexual sensation seeking scale, Kalichman and Rompa (1995) analysed the sexual compulsivity scale's psychometric properties among an HIV high-risk population and found that the scale was internally consistent ($r = .89$) and time stable based on test-retest coefficients conducted after two weeks of initial testing ($\alpha = .95$). Furthermore, the study found a significant correlation between sexual sensation seeking and sexual compulsivity, significant correlations between sexual compulsivity and loneliness, self-esteem and sexual control. The study did not find significant correlations between sexual compulsivity and sexual risk behaviour with regards to unprotected anal sex, number of sex partners, and drug and alcohol use. However, the association between sexual compulsivity and sexual risk behaviour has been supported by recent research, claiming that high sexual compulsivity scale scores are associated with sexual risk behaviour such as higher frequency of sex partners, greater likelihood of engaging in casual sex, and being diagnosed with multiple STIs (Dodge, Reece, Cole, & Standfort, 2004; Kalichman & Cain, 2004; Satinsky *et al.*, 2008). Kalichman *et al.*, (1994) has thus draw attention to the sexual compulsivity scale's ability to measure latent sexually compulsive personality traits.

Stupiansky, Reece, Middlestadt, Finn and Sherwood-Laughlin (2009) conducted research among a sample of 170 college women (96% were reported to be heterosexual) and grouped high sexual compulsives ($n = 21$, 12.4%) based on achieving a score that was one standard deviation above the mean (1.32 , $SD = .42$), as measured by the sexual compulsivity scale. The high sexually compulsive group reported to have significantly more lifetime vaginal-sex partners, and significantly more lifetime oral-sex partners, compared to those scoring low on the sexual compulsivity scale. Additionally, the group scoring high in sexual compulsivity were six times more likely to engage in sexual behaviour such as oral, vaginal and anal sex with a casual-sex

partner. These results support findings by Dodge *et al.* (2004) and similar results were found among a sample of men (Benotsch *et al.*, 1999; Benotsch, Kalichman, & Pinkerton, 2001). As per the definition, individuals who are sexually compulsive experience a general lack of control with regards to their sexual impulses, and may be inclined to sensation seeking which causes a desire to engage in diverse sexual experiences regardless of the negative consequences associated with sexual risk behaviours.

Benotsch *et al.*, (1999) found that among homosexual men with mixed sero-statuses, participants scoring high on the sexual compulsivity scale engaged in HIV high-risk behaviours with partners who did not know their HIV-status. Similar sexual risk behaviours were prevalent among samples of both African American men and women infected with HIV (Benotsch *et al.*, 2001). Benotsch *et al.*, (2001) reported that the HIV positive sample ($n = 294$) scored higher on the sexual compulsivity scale ($n = 49$) and engaged more frequently in unprotected sex with partners that were HIV negative or those with unknown HIV statuses, compared to those scoring low on the sexual compulsivity scale ($n = 243$). Additionally, it has been reported that participants who scored high on the sexual compulsivity scale were more likely to report substance use, such as cocaine, compared to participants who scored low on the sexual compulsivity scale (Benotsch *et al.*, 1999, Benotsch *et al.*, 2001).

Kelly, Bimbi, Nanin, Izienicki and Parsons (2009) analysed data yielded from a sample of 1543 gay, lesbian and bisexual respondents (78.7% male; 21.3% female) ranging between 18 and 78 years. Compared to participants who scored low on the sexual compulsivity scale ($n = 1108$); high sexual compulsives ($n = 431$) engage in a significantly greater frequency of sex while under the influence of alcohol (42% vs. 38%) and sex while under the influence of drugs

(37.2% vs. 27.5%). Due to their propensity to participate in sexual risk behaviours associated with HIV infection, coupled with the lack of general control over sexual impulses and disregard for consequences associated with sexually risky behaviour, sexual compulsivity seems to predict sexual sensation seeking tendencies.

2.1.4 The Five Factor Model

The literature reviewed thus far has highlighted traits which relates to sexual dimensions of personality as predictors of sexual behaviour and HIV-risk. Unlike sexual sensation seeking and sexual compulsivity, the five-factor model consists of broad concepts which is said to encompass the major dimensions of human personality (McCrae & John, 1992). Using a single dimension of personality presents certain limitations due to the fact that human personality consists of a broad array of facets which cannot be summed up by a single dimension; such as sexual sensation seeking or sexual compulsivity. As such, the five-factor model may contribute to a fuller understanding in terms of sexual risk behaviour as a predictive factor associated with sexuality (Miller *et al.*, 2004; Trobst, 2002; Turchik, Garske, Probst, & Irvin, 2010).

The five-factor model is commonly accepted within the scientific study of personality (John, Naumann, & Soto, 2008; John & Srivastava, 1999) and consists of five broad dimensions, namely neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (for a historical overview, see John *et al.*, 2008). The model is believed to be valid across cultures (McCrae & Costa, 1999) but recent research may dispel its claim of universality (see Gurven, Rueden, Massenkoff, Kaplan, & Vie, 2013). Nonetheless, as with sexual sensation seeking and sexual compulsivity, research has identified predictive qualities associated with

dimensions of the five-factor model and sexual risk behaviour, which include unprotected sex, multiple sex partners, and alcohol and substance use (see Hoyle *et al.*, 2000), as well as illegal drug use (Terraccian, Löckenhoff, Crum, Bienvenu, & Costa, 2008).

Although universal consensus has not been reached with regards to the conceptualization of each of the five factors, McCrae and John (1992) and John and Srivastava (1999) provide comprehensive descriptions of each. Firstly, neuroticism relates to an individual's propensity to experience emotions of a distressful nature. These negative emotions are linked to irrational thinking, low self-esteem, impulsivity control, desires, and an inability to cope effectively with one's thoughts and behaviour. Individuals who score high on the neuroticism scale tend to be tense; irritable; experience depression, guilt, and anger; hostile and so on. Those low in neuroticism tend to be described as composed, peaceful, and exhibiting a stable mood. The second factor is extraversion, which is associated with one's positive emotions. Individuals who score high in extraversion are described as sociable, confident, assured, active, emotionally positive and outgoing. An adventurous propensity or the tendency to seek excitement and stimulation is another characteristic of extraversion. Individuals who are low in extraversion tend to be withdrawn, shy or reserved, and associated with an over-control of impulses. Agreeableness, the third dimension of the five-factor model, has been linked to one's relationships and cooperation with others. Those scoring high on agreeableness tend to be sympathetic, trusting, and selfless. Individuals who are low in agreeableness tend to exhibit noncompliance or rebelliousness, and indifference. Conscientiousness is described as an individual's ability to think before acting, and those scoring high on this dimension tend to be competent, careful, systematic, self-disciplined, and goal-driven. On the other end of the continuum, those low in conscientiousness tend to be inefficient, unreliable, careless, and

laidback. The final factor, openness to experience is associated with the tendency to fantasize, have an artistic disposition, and display unconventionality. Individuals who are low in openness to experience are described as predictable, embrace conservative values and have few interests.

With regards to sensation seeking, earlier research by McCrae and Costa (as cited in Zuckerman, 1994) found significant correlations between the sensation seeking scale and openness to experiences, extraversion, agreeableness, and conscientiousness. However, Gaither and Sellbom (2003) attempted to replicate these findings but only found significant correlations between the sexual sensation seeking scale and openness to new experiences, for women ($n = 370$) but not men ($n = 158$). The researchers claimed that the varying results may have been due to using a short-form Big Five Inventory measure (Gaither & Sellbom, 2003), compared to the full NEO Personality Inventory used by McCrae and Costa (as cited in Zuckerman, 1994). However, in addition to this, the conflicting results may have also been due to the different sensation seeking instruments used; Costa and McCrae used Zuckerman's sensation seeking scale, which consists of broad personality factors compared to Kalichman's sexual sensation seeking scale, which pertains to a single dimension of personality, namely sexuality.

Nonetheless, research has examined the associations between sexual risk behaviour and the five-factor model of personality, claiming that individuals low in conscientiousness and agreeableness, high in neuroticism (Trobst, 2002), high in extraversion (Schmitt, 2004) and low in openness (Miller, *et al.*, 2004) have exhibited predictive relationships with regards to sexual risk behaviour. In a study which examined the sexual risk behaviour of college students ($n = 247$), Gute and Eshbaugh (2008) reported that neuroticism and extraversion has been significantly correlated with sexual behaviour, including engaging in sexual intercourse during

the first twenty-four hours of meeting someone, while extraversion and conscientiousness has been significantly associated with casual sex. Additionally, both conscientiousness and agreeableness have been identified as statistical predictors of engaging in oral sex within the first twenty-four hours of knowing someone (Gute & Eshbaugh, 2008)

Evaluating the five-factor model's ability to predict university students' sexual risk behaviour, Turchik *et al.* (2010) recruited 310 undergraduates to respond on self-reported measures. The study reported that for men ($n = 86$), sexual risk taking was significantly correlated with neuroticism and agreeableness. Among women ($n = 224$), the only significant correlation was found between sexual risk behaviour and conscientiousness. According to the researchers, men are more inclined to express sexual desirability toward women and dominate sexual interaction when encountering a potential sexual partner. Furthermore, Miller *et al.* (2004) claimed that men who achieve low scores for agreeableness engage in sexually promiscuous activities while in committed relationships, as well as being more likely to engage in sexual acts with multiple partners.

Sexual risk behaviour associated with substance use and personality factors have been extensively researched (Bogg & Roberts, 2004; Gorman & Derzon, 2002; Malouff, Thorsteinsson, Rooke, & Schutte, 2007). Terracciano *et al.* (2008) set out to identify personality factors associated with substance use by utilizing a sample of 1102 participants between the ages of 30 and 94 years ($M = 56.6$; $SD = 12.4$). The participants were asked to complete a self-report personality measure and results indicated that low conscientiousness and high neuroticism were related to substance use such as cocaine, tobacco and heroin. Specifically, those using marijuana were characterised by low conscientiousness and high on openness to experiences.

These findings highlight the relationship between sexual risk behaviour associated with sensation seeking and broad personality factors, such as extraversion, neuroticism, openness to experiences, conscientiousness, and agreeableness. As a result, it would be appropriate to include measures which take into consideration broader dimensions of personality such as the five-factor model when researching possible predictor variables of sensation seeking behaviour associated with an individual's risk for venereal disease and infection. Although the personality traits discussed thus far does not explicitly involve personality dimensions associated with sexual preference and gender, non-personality factors associated with sexual risk behaviour should be taken into consideration in order to obtain a fuller understanding of the relationship between sensation seeking and sexual risk behaviour.

2.1.5 Gender and Sexuality

Sexual identity, sexual exploration and gender differences has been highlighted as a factor associated with sexual risk behaviour (Hart *et al.*, 2003; Millett, Malebranche, Mason, & Spikes, 2005; McCoul & Haslam, 2001; Pathela *et al.*, 2006; Wechsberg *et al.*, 2008). It is therefore vital to any study which attempts to identify predictors of sensation seeking behaviour to consider sexuality and gender. The literature reviewed thus far has shown that men achieve higher scale scores on measures of sexual sensation seeking and sexual compulsivity; are generally more promiscuous than women as identified by number of sexual partners; are more likely to engage in casual sex; and more often engage in sex under the influence of alcohol. Sexuality and gender is therefore an important variable to explore in terms of sexual risk behaviour.

McCoul and Haslam (2001) compared homosexual ($n = 104$) and heterosexual ($n = 112$) men on measures of sexual sensation seeking and reported that their homosexual sample achieved higher sexual sensation seeking scores and were more likely to use drugs before engaging in unprotected sex, in comparison to their heterosexual counterparts. However, when comparing the two samples' correlations between personality and sexual risk behaviour, only the heterosexual group reported statistically significant correlations between sexual sensation seeking and frequency of unprotected sex, and sexual sensation seeking and number of sex partners. Furthermore, frequency of non-alcoholic drug use has been once again significantly correlated with both heterosexuals' likelihood to engage in unprotected sex, as well as their number of sexual partners. Drug use may therefore be considered as a sexual risk factor associated with sexuality, which influences one's ability to make sound decisions during sexual encounters.

In contrast to McCoul and Haslam (2001), researchers have claimed that homosexuals are more likely to report higher drug use (Degenhardt, 2005). Furthermore, the need for such research has been driven due to the increase of HIV-risk behaviour, including substance use, among men and women who engage in same-sex intercourse (Gonzales *et al.*, 1999; Halkitis, Parsons, & Stirratt, 2001; Parks, 1999) as well as homosexual men's frequency of unprotected anal intercourse (Halkitis *et al.*, 2001; Rusch, Lampinen, Schilder, & Hogg, 2004).

In order to identify stigmatized populations, Degenhardt (2005) utilized snowball sampling and yielded data from 852 ecstasy users who self-identified as either heterosexual (male = 455, female = 252) or homosexual, bisexual or lesbian (female = 76; male = 69). Gender and sexuality differences have been found among female participants. Lesbian and bisexual females reported

higher rates of drugs use during the past six months, compared to their heterosexual counterpart with regards to ketamine, base methamphetamine, crystal methamphetamine, amyl nitrate, heroin, other opiates, antidepressants and benzodiazepines. Similar trends were found when comparing the homosexual and bisexual male sample to heterosexual males with regards to the use of ketamine, crystal meth, amyl nitrate, and benzodiazepine. Results indicated that heterosexual males reported higher use of LSD and nitrous oxide, when compared to the homosexual sample. Across all groups, sexual risk behaviours, such as engaging in penetrative sex during the past six months, were reported by the majority of participants (>90%). Specifically, lesbian and bisexual females were more likely to have multiple sex partners (> 6 partners) during the past six months, compared to heterosexual females (13% vs. 4%, respectively). Both groups of heterosexual, and lesbian and bisexual females engaged in sexual intercourse under the influence of drugs (80% and 88%, respectively). Heterosexual males were more likely to have had a regular sex partner (83%) compared to homosexual and bisexual men (69%) during the past six months. Homosexual and bisexual men were more likely to have engaged in casual sex encounters, and were more likely to have had multiple sex partners (> 6 partners), compared to heterosexual men (22% and 8%, respectively). Furthermore, homosexual and bisexual men reported a higher rate of drug use during sex (91%) during the past six months, compared to the heterosexual male sample (74%). These results are in line with previous research claiming that homosexual men and women are inclined to engage in sensation seeking behaviours (see Dolezal, Meyer-Bahlburg, Remien, & Petkova, 1997). Additionally, substance use has been linked to both sexual desire (Gorzalka, Hill, & Chang, 2010) and sexual risk behaviour (Anderson & Stein, 2011; Cooper, 2000). Specifically, alcohol use has been associated with unprotected sex (LaBrie, Schiffman, & Earlywine, 2005), but some researchers have not been able to replicate these findings (see Tubman & Langer, 1995).

In a sample of 1919 participants, Prince and Bernard (1998) reported that only 10% of all participants practiced regular condom use during intercourse. Additionally, in line with the literature, one may expect that alcohol consumption decreases one's likelihood of condom use. As a result, it is highly likely that the lack of condom use may lead to an increased risk of sexually transmitted disease and infection.

Another high sexual risk group are men who self-identify as heterosexual, but who occasionally engage in penetrative and non-sexual penetrative intercourse with other men (Millett *et al.*, 2005). It has been reported that men who have sex with men but who self-identify as heterosexual (MSM) are unlikely to be tested for the HIV antibody (Pathela *et al.*, 2006), frequently engage in unprotected anal sex with occasional male sex partners (Goldbaum, Perdue, & Higgins, 1996), as well as unprotected anal and vaginal sex with female sex partners while under the influence of substances (Greene *et al.*, 2013), and frequently engaged in casual sex (Schindhelm & Hospers, 2004). Of particular concern are results which indicate that MSM are less likely to know their sero-status. Research has highlighted the preventative influence that knowledge of one's HIV-status has on sexual risk behaviour: it has been reported that individuals who are aware of their sero-statuses are less likely to engage in sexually risky behaviour, in comparison to those who are unaware (for a meta-analysis, see Marks, Crepaz, Senterfitt, & Jansen, 2004). Men who have sex with men and self-identify as heterosexual are therefore a high risk group in terms of HIV infection due to their likelihood to engage in a romantic relationship with a female, have unprotected anal and vaginal sex with women, as well as unprotected anal sex with men, and engage in sex while under the influence of substances.

2.1.6 Sub-Conclusion

Thus far I have highlighted factors, based on the literature, which have reported significant relationships between sexual risk behaviour and personality traits. These personality traits include sexual sensation seeking, sexual compulsivity, extraversion, neuroticism, conscientiousness, openness to experiences, and agreeableness. Additionally, the identified personality traits have been associated with sexual risk behaviour based on number of sexual partners, unprotected sex, substance use, and gender and sexuality. By identifying sexual risk behaviours associated with personality traits, I have introduced the relationship between these two factors. This directly links with my first research objective, namely identifying possible predictors of sexual sensation seeking. The first research objective lays the foundation to answer the second, which examines the identified predictors of sexual sensation seeking for statistical significance. However, before investigating the third variable effect that time spent on the internet has on the statistically significant predictors of sexual sensation seeking, which is the third research objective, the notion of online sensation seeking has to be addressed. The literature review continues in order to highlight the relationship between sexual sensation seeking in an online, cyber-environment, and sexual risk behaviour.

2.2 The Internet and Sexual Risk Behaviour associated with Online Sensation Seeking

During the past decade the internet has become an integral part of life, both online and offline; changing the way we communicate. Our interactions with others via the internet, our behavioural responses, our cognitive functioning and emotional reactions are largely driven by each individual's personality (Amichai-Hamburger, 2002). As a result, many researchers have

focused on the relationship between personality and internet use (Kalmus, Realo, & Siiback, 2011; McElroy, Hendrickson, Townsend, & DeMarie, 2007; McKenna & Bargh, 2000; Özgüven & Mucan, 2013).

Amichai-Hamburger (2002) claimed that sensation seeking and risk taking are two vital aspects that should be considered when researching online behaviour. Additionally, it has been suggested that sensation seekers and risk takers may utilize the internet to express varied facets of their personality by experimenting with online identities (Amichai-Hamburger, 2002). In all probability, the manner in which one behaves while being in a cyber-environment may differ substantially from behaviour expressed in a real-world context (see McKenna *et al.*, 2002). The incongruent relationship between online persona and real-world persona may be explained due to the internet's ability to offer users anonymity, affordability and accessibility, which has been referred to as the 'Triple A-Engine' (Cooper, 2002; Cooper, Delmonico, & Burg, 2002).

The internet's anonymity, accessibility and affordability may influence individuals to explore potentially hidden aspects of their personality; allowing individuals to easily experiment with online identities. Most important is the notion of online anonymity. Expressing one's sexuality and sexual desires may not be as acceptable during face-to-face interactions, as it may be online; which is why it has been suggested that when conditions of internet anonymity are present, sexual expression and sexual pursuits take place (Stern & Handel, 2001). Not surprisingly, the internet has been referred to as the next sexual revolution because of the growing link between the internet and sexuality (Cooper & Griffin-Shelley, 2002). Based on this, high sexual sensation seekers and sexual risk takers may be attracted to the internet in search of

recreation, entertainment, education, or support associated with sexual exploration, desires or activities (Cooper *et al.*, 1999a; Cooper *et al.*, 1999b; Cooper, Galbreath, & Becker, 2004).

2.2.1 Online Sensation Seeking and Offline Sexual Risk Behaviour

Although there is an extensive body of literature exploring the internet's role in sexuality (Brickell, 2012; Daneback, Cooper, & Mansson, 2005; Daneback, Ross, & Mansson, 2006; Döring, 2009; Witterneck, Burgess, Short, Smith, & Cervantes, 2012) and how personality factors influence internet use (Ebeling-Witte, Frank, & Lester, 2007; Mottram, GradDipPsych, & Flemming, 2009) research that examines the link between internet use and sexual sensation seeking is limited. Studies which take both sexual sensation seeking and the internet into consideration revolve mostly around topics of psychopathology (Bingham & Piotrowski, 1996; Young, 1998; Young & Rogers, 1998), and conduct their research among HIV high-risk groups e.g. gay/bisexual escorts (Parsons *et al.*, 2001), men who have sex with men but do not identify as homosexual (Matarelli, 2012), and college students (Perry *et al.*, 2007).

In an earlier study conducted by Cooper *et al.* (1999b) with 9177 internet users, approximately 8% engaged in online sexual pursuits for a minimum of eleven hours per week and met sexually compulsive criteria indicated by the sexual compulsivity scale. The study reported a linear relationship between time spent online and sexual compulsivity. Although a large portion of the sample was capable of limiting their online sexual pursuits to less than one hour per week, it is clear that for some internet users (43%) online sexual activities may be regarded as problematic. Additionally, the amount of time spent online was reported to be a strong indicator of sexual compulsivity and sensation seeking (Cooper *et al.*, 1999b). However,

Parson *et al.* (2001) did not find any relationship between internet hours per week associated with online sexual activities and sexual compulsivity.

A key aspect of online anonymity allows individuals to explore their sexuality which may not be as acceptable in a real-world context. Humphreys (1970) spoke about men who identify as heterosexual but engage in anonymous sexual activities with other men as a form of sexual release. The internet allows individuals to explore their sexuality, if they desire to, under conditions of online anonymity. As such, online platforms may be a more attractive medium for individuals who wish to keep their sexual behaviour hidden (McFarlane, Bull, & Rietmeijer, 2002). Men using the internet for entertainment purposes, specifically those visiting gay chatrooms, are reported to be more likely bisexual in sexual orientation, less likely to disclose their bisexual or homosexual orientation to others, more likely to be in a relationship with a female and to only engage in same-sex intercourse on a casual basis (Tikkanen & Ross 2000). Furthermore, with regards to sexual risk behaviour, male participants who reported visiting a gay chatroom also reported having unprotected anal intercourse in the past twelve months (Tikkanen & Ross 2000).

Cybersex has been defined by Cooper and Griffin-Shelley (2002) as an activity that results in sexual gratification while using the internet. In order to compare men who have sex with men on the internet, and heterosexually identified men who have sex with women, Ross *et al.* (2005) recruited 1846 Swedish males ($M_{age} = 32.0$, $SD = 10.5$), of which 244 (32%) participants reported engaging in cybersex activities. Of those who engaged in cybersex, 186 self-identified as heterosexual, 38 reported being gay or bisexual, and 20 participants were men who had sex with men (MSM) but did not identify as such (MSM-NI) via the internet. The study reported that

although the MSM-NI group spent more time online per week ($M = 26.6$; $\pm SD = 21.7$ hours), compared to the heterosexual group ($M = 15.1.6$; $\pm SD = 11.2$ hours) there were no significant differences between the two groups' time spent per week on online sexual pursuits. However for the heterosexual group, the majority of hours spent online were occupied by online sexual pursuits ($M = 12.1$; $\pm SD = 20$) compared to the MSM-NI group ($M = 14.9$; $\pm SD = 29.0$). Significantly, the heterosexual group reported that before they started using the internet, they never engaged in sex with prostitutes (87.1%, $p < .10$); and that there are things they would do online, which they would never do offline (21.0%, $p < .01$) (Ross *et al.*, 2005).

For some, online sexual pursuits extend beyond the internet and progress to an offline real-world environment. The internet has mainstreamed the mode of initiating sexual contact with others. The salient opportunities that online anonymity provides allow individuals to explore sexuality and obtain sexual services with ease. With the expansion of the internet came new means of advertising, as well as obtaining sex-related services. Parsons *et al.* (2001) used snowball sampling to recruit gay and bisexual male escorts ($n = 50$) who advertise their services via the internet and reported a mean sexual compulsivity score of 19.24 ($SD = 6.89$). Significant associations were found between sexual compulsivity and the following sexual risk behaviours; number of casual sex partners and number of male-escort partners, frequency of unprotected receptive anal sex with casual-sex partners, and frequency of unprotected insertive anal sex with male-escort partners². Furthermore, high sexual sensation seeking and low levels of self-confidence were responsible for 36% of the variance ($p < .001$) and were associated with high sexual compulsivity.

² Authors noted that due to small sample size, the predictability and power of the regression analysis was adjusted.

Eliciting casual sex via online portals is a health risk in terms of sexually transmitted infections and diseases (McFarlane, Bull, & Rietmeijer, 2000). In their sample, Dew and Chaney (2005) divided 513 male participants ($M_{age} = 118.61$; $SD = 14.40$) into three groups based on their sexual compulsivity scale scores ($M = 118.61$; $SD = 14.40$). The groups consisted of the non-sexually compulsive ($n = 445$), moderate sexually compulsive ($n = 50$), and sexually compulsive ($n = 18$). Dew and Chaney (2005) reported that the moderate and high sexual compulsive groups engaged in significantly more sexual risk behaviour which could increase their chances of being infected with HIV/AIDS, compared to non-sexual compulsives. Additionally, the moderate and high sexually compulsive groups were more likely to engage in unprotected receptive anal sex and unprotected receptive oral intercourse, compared to the non-sexually compulsive group. Both the moderate and sexually compulsive participants were more likely to spend time engaging in online sexual activities, as well as engage in online communication which resulted in face-to-face sex partners, and use the internet in search of individuals to engage in immediate sexual activities (Dew & Chaney, 2005)

The studies reviewed thus far have only taken men into account; this however does not mean that women do not use the internet for sexual pursuits. Daneback *et al.* (2006) analysed data from 1835 respondents (female = 658; male = 800) who engaged in online sexual pursuits. Only 5.6% of the total sample was classified as being sexually compulsive (74% men; 26% women), based on sexual compulsivity scale scores. The sexual compulsives who spent fifteen hours or more online per week were inclined to look for sex partners, responded to sex advertisements, chatted with people of similar interests, bought sex related paraphernalia, and contacted prostitutes.

Daneback *et al.* (2006) and Perry *et al.* (2007) confirm that women are less sexually compulsive and less inclined to sexual sensation seeking, compared to men. Furthermore, it has been reported that men used the internet significantly more for sexual purposes, compared to women. Additionally, the use of the internet for online entertainment purposes resulted in an increase in sexual sensation seeking. What is well worth noting is that the authors reported a positive correlation between online sexual activities and both sexual compulsivity and risk behaviour (Perry *et al.*, 2007).

In a study conducted with women who reported that they met people online and engaged in face-to-face sexual activities, 55% of 281 female respondents claimed that provision was not made to practice safe sex by either member (Padgett, 2007). Additionally, Padgett (2007) reports that 77% of 381 females did not use a condom during their last sexual activity with a partner that they had met online. Females who utilized the internet as a medium to meet others in order to engage in offline sex, scored on average higher on the sexual sensation seeking scale ($M = 23.91$; $SD = 6.01$) compared to females who had not ($M = 20.68$; $SD = 4.16$). Those scoring high on the sexual sensation seeking scale and who used the internet in order to find sexual partners spent more hours on the internet, per week ($M = 27.58$; $SD = 17.6$), compared to females who scored low on the sexual sensation seeking scale and who spent less time online ($M = 19.85$; $SD = 14.0$) (Patino, 2012).

Sexual sensation seeking in an online environment is thus a factor that should be taken into account when examining the link between the internet and sexual risk behaviour related to sexual sensation seeking. The literature reviewed thus far highlights the occurrence of both sexual sensation seeking within an online, cyber-environment, as well as the progression from online to

offline real-world sexual sensation seeking and sexual risk behaviour. However, due to the anonymity factor offered by the internet, the persona portrayed online by internet users may differ from the persona associated with real-world situations. As such, factors such as deception and self-disclosure may play a role in terms of an internet user's sensation seeking tendencies to achieve immediate sexual stimulation during online sexual pursuits.

2.2.2 Online Deception and Self-Disclosure

The internet's propensity for online anonymity and sensation seeking has suggested that high sensation seekers are more inclined to engage in online deception, compared to low sensation seekers due to the difference between real-world persona and online persona (Lu, 2008). Capri and Gorski (2006) recruited 257 participants to complete an online survey which dealt with online deception. The study reported that although 73% of participants believed that online deception was highly prevalent, only 29% of the sample reported engaging in online deception. Younger internet users were more likely to deceive others online compared to older internet users, and those users who frequently used the internet for communicative purposes were more likely to portray characteristics associated with online deception. Research suggests that greater use of computer-mediated-communication results in an increase in deception (Hancock, Thom-Santelli, & Ritchie, 2004) related to age, sex, occupation and marital status (Capri & Gorski, 2006).

Stieger, Eichinger, and Honeder (2009) reported that gender switching was one of the most concerning forms of online deception. Gender switching was perceived to be more disturbing when committed by members of the same sex, compared to gender switching among

members of the opposite sex. Furthermore, women expressed more distress with regards to same sex gender swapping when compared to men.

It is believed that cyber-environments encourage individuals to disclose more compared to real-world circumstances (Bonebrake, 2002; McKenna & Bargh, 1999). Men tend to sexual self-disclose deeper and to a larger extent than females in both cyberspace and real life (Chiou & Wan, 2006). Furthermore, it is believed that participants who sexually self-disclose in real life also do so in cyber-environments, and vice versa. In terms of gender differences, the breadth of sexual self-disclosure by male participants was greater compared to female participants in real life as well as in cyber-environments (Chiou & Wan, 2006). The researchers claimed that online anonymity, privacy and deindividuation might play a role in levels of sexual self-disclosure and online deception (Chiou & Wan, 2006).

In order to examine passion associated with internet use and its association with regards to personality dimensions, Tosun and Lajunen (2009) recruited 421 university students (17 to 30 years; $M = 21.73$, $SD = 2.23$). Significant correlations were reported between the neuroticism and online expressing of one's true self (see McKenna *et al.*, 2002), as measured by the real me questionnaire (Amichai-Hamburger, Wainapel, & Fox, 2002). Scoring low on the extraversion scale and high on the neuroticism scale indicated that participants expressed their true self and self-disclosed to a larger extent on the internet, compared to face-to-face situations (Amichai-Humberger *et al.*, 2002). McKenna *et al.* (2002) reported that individuals who are characterized as socially anxious and lonely were likely to be introverted and neurotic. As a result, these individuals tend to express their true self more via online platforms.

2.2.3 Conclusion

The literature highlights the factors influencing sexual sensation seeking both online and offline. It is clear that technology, online environments and internet anonymity affect online deception, self-disclosure, and gender and sexuality plays a role in predicting sexual sensation seeking. The individual's perceived risk and optimistic bias influences the degree to which one embarks on sexual sensation seeking. Characteristics pertaining to personality, such as sexual compulsivity, extraversion, openness to experiences, agreeableness, neuroticism, and conscientiousness are associated with an individual's sexual risk behaviour. As such, internet users may express disinhibition in cyber-environments, compared to face-to-face interactions. By applying the online disinhibition effect to explain behaviour associated with internet users, I adopted the notion that when conditions of anonymity are present, the internet user feels protected from society's judgement, as well as feeling less visible, which may increase online self-disclosure or one's ability to explore and experiment with sexuality (Suler, 2004).

2.3 Theoretical Framework: The Online Disinhibition Effect

Internet research has illustrated that for some individuals, online behaviour differs to a large extent from their real-world behaviour and that internet users have done things in a cyber-environment which they would not usually do during face-to-face encounters (Ross *et al.*, 2005). When in a cyber-environment, an individual's sexual compulsivity, extraversion, openness to experiences, neuroticism, conscientiousness, online deception, self-disclosure, and gender and sexuality may have an effect on one's sexual sensation seeking personality trait. One may propose that due to the salient nature of online anonymity, the more an individual frequents the

internet, the more likely the individual may engage in behaviour that he or she would not typically engage in with non-internet persons, during real-world situations. The research therefore aligns itself with, and frames itself within, the online disinhibition effect (Suler, 2004).

According to John Suler (2004), the online disinhibition effect occurs when individuals self-express more freely, either communicatively or behaviourally, via the internet in an unreserved, intense, or more frequent manner, compared to face-to-face encounters. Additionally, the individual's online expression may manifest itself on a continuum from benign disinhibition to toxic disinhibition. Benign disinhibition occurs when individuals reveal intensely personal, potentially hidden aspects of their personality such as self-disclosure which may expose one's vulnerability. Suler (2002) claims that benign disinhibition may relate to an individual's development, in terms of understanding and exploring aspects of one's identity. On the other hand, toxic disinhibition refers to the internet user's engagement in online hostility, such as hate speech, deception, and felonies. According to Suler (2004), there are six interrelated factors which influence the online disinhibition effect, namely: dissociative anonymity; invisibility; asynchronicity; solipsistic introjections; dissociative imagination; and minimization of authority.

Dissociative anonymity and invisibility plays an important role in online activities. As noted, when online anonymity is present one can actively choose to create one's persona (Cooper *et al.*, 2002; Cooper & Griffin-Shelley, 2002). People may hide their real-world persona, alter it (online deception), or self-disclose topics related to the socially hidden aspects of the self. Individuals may chose to only express these potentially hidden aspects of themselves within an online environment due to the anonymity and invisibility associated with the internet (Suler,

2004). However, as observed by Stern and Handel (2001) when online communication occurs under conditions of anonymity, sexual expression and online sexual pursuits may take place, as well as disclosing sexual information to others (Chiou, 2006). Asynchronicity is associated with the communicative function and may intensely influence one's expression of online behaviour or disclosure, be it sexual or otherwise.

One may psychologically compensate for the lack of real time face-to-face interaction with other internet users via the internet, by creating an identity within one's psyche for other online users. This is known as solipsistic introjection and is based on two aspects: one is the manner in which others choose to present themselves online, which is strongly influenced by one's own desires; and the other, one's personal reasons for being online. As mentioned, individuals who are sexually compulsive spend extended hours online seeking out others with similar interests to their own (Daneback *et al.*, 2006). Furthermore, high sensation seekers prefer the company of those who are less conservative and more sexually liberal (Horvath & Zuckerman, 1993) which may advance their sexual sensation seeking tendencies. Similarly to men who have sex with other men but self-classify as heterosexual (Ross *et al.*, 2005), the fourth factor which influences the online disinhibition effect states that dissociative imagination allows the internet user to dissociate. This dissociation may be explained with regards to initiating online communication which results in offline sexual risk behaviour, from things that they would never usually do during face-to-face encounters (Ross *et al.*, 2005). Suler (2004) states that the online self is associated with fiction and dissociated from the offline self, which is associated with reality; however, some individuals may have difficulty compartmentalizing between the two.

There is no doubt that online expression may result in a therapeutic, cathartic experience for online users, but when online self- experimentation and exploration result in offline sexual risk influenced by the individual's predisposition to sexual sensation seeking, then it is obvious that the internet plays a role in terms of its association with sexual health risks (Cooper, Boies, Maheu, & Greenfield, 2000). Finally, the lack of status and authority in online environments further affects one's ability to connect with others, for whichever purpose it may relate to, based on the ability to skilfully express one's motives for being online, and one's determination associated with these motives. However, these six factors are not the only variables affecting the online disinhibition effect in terms of an individual's ability to self-disclose and behave online. Individual differences and predispositions play a contributing role as well. Personality factors associated with sexual risk behaviour, such as sexual compulsivity, extraversion, openness to experiences, neuroticism, and conscientiousness, as well as online deception, self-disclosure, and sexuality may be predictors of one's sexual sensation seeking online and offline. Furthermore, the amount of time spent on the internet may play a role, as a third variable, with regards to these predictors of sexual sensation seeking and may influence one's ability to seek out sexual sensations in cyber-environments and real-world, face-to-face encounters.

CHAPTER 3

RESEARCH METHODS

3.1 Introduction

The following three inter-related objectives were selected in order to answer the research question: What are the statistical predictors of sexual sensation seeking and does time online, as a third variable, affect the relationship between sexual sensation seeking and the predictors thereof?

1. Identify the predictors of Sexual Sensation Seeking, based on the literature;
2. Analyse the identified predictors of Sexual Sensation Seeking and determine which of them are statistically significant;
3. Using product-term regression analysis, investigate the third variable effect that time spent on the internet per day, measured in hours, has on the relationship between Sexual Sensation Seeking and the statistically significant predictors of sexual sensation Seeking.

A valuable aspect of the research allowed theoretical knowledge to shape the selection of sexual sensation seeking predictors, based on the extensive literature reviewed. Thereafter, I was given a practical opportunity to identifying the statistically significant predictors. Finally, I examined the third variable effect that hours spent on the internet had on the relationship between sexual sensation seeking and the statistically significant predictors of sexual sensation seeking.

The Research Methods chapter aims to convey a detailed description of the chosen research strategy employed to achieve the objectives identified above. Furthermore, the chapter provides a description of the data collection process in detail, including site locations with regards to the recruitment of research participants and the selection of a sample, and the procedure relating to the data analysis.

3.2 Research Strategy

A cross-sectional survey design was adapted, and as a result, the use of a descriptive, self-report, internet based questionnaire was used. Survey research is typically utilized to gather information from a sample of a population (Biggam, 2008). A survey approach allowed a greater opportunity to investigate several predictor variables of sexual sensation seeking and as such, supports two of the research objectives: to identify statistically significant predictors of sexual sensation seeking, as well as examine the third variable influence that the amount of internet hours per day has on the relationship between the statistically significant predictors of sexual sensation seeking and sexual sensation seeking. The survey design and an online questionnaire were utilized due to the content of the measures, the need for online anonymity which results from cyber-environments, and the convenience of access it offered (Schmidt, 1997). To ensure anonymity and confidentiality, the use of a self-administered questionnaire was appropriate due to the moderate risk associated with the research topic; which pertained to sexual behaviour and aspects of the participant's personality relating to private and social lives. It has been established that psychological research methods which incorporate the use of the internet, such as online questionnaires, result in the collection of legitimate data similar to that of traditional research collection strategies (Buchanan & Smith, 1999; Chuah, Drasgow, & Roberts, 2006; Gosling,

Vazire, Srivastava, & John, 2004; McGraw, Tew, & Williams, 2000; Skitka & Sargis, 2006; Srivastava, John, Gosling, & Potter, 2003).

The strategy thus aligned itself with the need for anonymity and confidentiality associated with conducting research in the field of sexual risk behaviour, sexuality and personality. As such, I made use of convenient and snowball sampling techniques. These sampling methods were used to increase the representation and diversity of groups that may be hard to identify due to social stigma, such as sexually curious individuals, individuals who may not have disclosed their same sex attraction, and transgendered individuals.

3.3 Data Collection

Prior to collecting data, an application to conduct research involving human participation was reviewed and ethically approved by the Research Ethics Committee affiliated with a large South African university. Following a set of guidelines with regards to participation; inclusion criteria maintained that participants have adult status, viz. 18 years of age or older due to the measures relating to sexual risk behaviour and attitudes, and sexuality. Participants were excluded from the research if they claimed that they were younger than 18 years of age and if participants failed to respond to all questionnaire items.

The data collection consisted of two phases. Phase one was established to evaluate scale reliability among South African adults of about 10-20% of the total required sample (see Baker, 1994). As such, I initially recruited potential participants for a pilot study from various online platforms such as Facebook, Twitter, Gaydar and Gumtree. Although the measures used are

valid in terms of being predictors of sexual sensation seeking, based on the extensive body of literature (Kalichman *et al.*, 1994; Kalichman & Rompa, 1995) many of the measures had not been tested on a South African sample, and as a result; the first step was to evaluate each measure's scale reliability.

Potential participants were requested to participate in academic research by completing an online questionnaire (Appendix C-L) which pertains to personality, sexuality and the use of the internet. A deliberately vague description of the research was provided in order to prevent response bias. Furthermore, potential participants were informed that participation was limited to adults only. Additionally, the online platforms informed potential participants that if they were interested in participating, the online questionnaire would require 20-25 minutes of their time to complete. A website link was listed on each online platform in order to redirect potential participants to the online questionnaire. Potential participants were also informed that participation poses moderate risk due to the subject matter. Due to the nature of the questionnaire's items pertaining to topics of personal and sexual behaviour, potential participants were informed and allowed to withdraw their association from the research by simply not answering further questions presented to them and by closing their internet browser. A list of free organisations (Appendix A) was provided for participants to consult in the unlikely event that participation in this study resulted in any form of discomfort.

After participants were redirected to the online questionnaire, they were presented with a consent form (Appendix B) and were asked to retype the alpha-numerical characters as displayed. By retyping the alpha-numerical characters, participants claimed to understand the

nature of the research, and provided their consent to participate. Once consent was obtained, the participant was allowed to continue with the online questionnaire.

The questionnaire consists of seven divisions; a demographic section (Appendix C) and a section consisting of a number of scales (Appendix D-L). Before each section, subsection and scale, instructions were displayed to guide the participant in order to complete the questionnaire. After the participant completed the questionnaire, he or she was required to click on a ‘submit survey’ button. The responses were stored on Survey.sun.ac.za, an online platform used by Stellenbosch University researchers. As the primary researcher, I alone had access to the responses, which were stored via the survey.sun.ac.za platform for the duration of the data collection until the analysis of the pilot data. As soon as the pilot study collected complete responses from 31 participants, the online questionnaire was temporarily suspended in order to evaluate the scale reliability using Cronbach’s alpha. All scales yielded acceptable reliability results (Table 1) and as such, the second phase of the data collection process continued.

Table 1: Reliability scores (Cronbach’s alpha) for pilot sample.

Scale	α ($n=31$)
Extraversion	.87
Agreeableness	.72
Conscientiousness	.75
Neuroticism	.84
Openness	.66
Sexual Sensation Seeking	.83
Sexual Compulsivity	.93
Online Deception	.60
Online Self-Disclosure	.85
Sexual Risk Behaviour	.68

Klein's GRID: Past	.93
Klein's GRID: Present	.95
Klein's Grid: Ideal	.96

As with the pilot study, potential participants were recruited from online platforms as previously mentioned. Additionally, recruitment extended to the residences of a large South African university. Due to the addition of requesting participation from students living in university residences, an application was made to the university's Institutional Research and Planning division and institutional permission was approved by the division's senior director. Additionally, permission to recruit potential student-participation was sought out by the university's Centre of Student Communities, which was approved and granted by the centre's director.

Continuing with the convenience and snowball sampling method, emails (Appendix A) were sent out to various student communities requesting their participation in academic research. In exactly the same manner as with the pilot study, potential participants were informed about the nature of the research, presented with a list of participation criteria, and offered a link which, if accessed, redirected those interested in participating, to the online questionnaire. Furthermore, participants were once again enlightened with regards to the personal nature of the questionnaire items, informed about issues pertaining to anonymity, confidentiality, autonomy and presented with a list of referrals in the event that discomfort should arise due to their participation in the research. All responses were stored via Survey.sun.ac.za, of which only I had access to, until the analysis of the data. After the second phase of the data collection period lapsed, scales were once again analysed and yielded acceptable reliability (Table 2).

Table 2: Reliability scores (Cronbach's alpha) for final sample.

Scale	α ($N = 336$)
Extraversion	.84
Agreeableness	.70
Conscientiousness	.84
Neuroticism	.83
Openness	.67
Sexual Sensation Seeking	.88
Sexual Compulsivity	.89
Online Deception	.64
Online Self-Disclosure	.82
Sexual Risk Behaviour	.64 ³
Klein's GRID: Past	.93
Klein's GRID: Present	.94
Klein's Grid: Ideal	.95

3.4 Materials

The online questionnaire consisted of two broad areas; the first presented items relating to demographic aspects (Appendix C) relating to age, gender, race, sexual orientation, relationship status, citizenship, disclosure of same-sex attraction, and sexual behaviour. The second section of the online questionnaire consisted of numerous scales (Appendix D –L) and presented items relating to the following twelve variables; predictors (sexual compulsivity, sexual behaviour, extraversion, agreeableness, conscientiousness, neuroticism, openness, online deception, self disclosure, and three scales pertaining to sexual orientation), outcome (sexual sensation seeking) and the third variable (hours spent on the internet for work purpose, hours spent on the internet associated with online sexual pursuits, and hours spent on the internet for personal purposes).

³ Please see Sexual Risk Behaviour Scale under the Materials heading, in this chapter.

Personality: The Big Five Inventory was used to assess personality (John *et al.*, 2008). The scale consists of 44-items and measures extraversion, agreeableness, conscientiousness, neuroticism, and openness. Participants were presented with statements and asked to what extent they agree with each statement (anchored on a five-point likert scale ranging from 1 = *disagree strongly* to 5 = *agree strongly*). Previous research reported Cronbach's alpha of .87 for extraversion, .81 for agreeableness, .85 for conscientiousness, .84 for neuroticism, and .78 for openness (John *et al.*, 2008; John & Srivastava, 1999). Reliability in this study was determined using Cronbach's alpha as .84 for extraversion, .70 for agreeableness, .84 for conscientiousness, .83 for neuroticism, and .67 for openness.

Sexual Compulsivity: The Sexual Compulsivity Scale was developed by Kalichman and Rompa (1995) and consists of 10 items. The scale measures an individual's fixations with sexual behaviours and hypersexuality. Responses were anchored on a four-point Likert scale which range from 1 = *not at all like me* to 4 = *very much like me*. Previous research conducted among American college students reported scale reliability of .83 (Perry *et al.*, 2007). Reliability in this study was determined using Cronbach's alpha as .89 for the sexual compulsivity scale.

Sexual Sensation Seeking: Kalichman and Rompa (1995) developed the Sexual Sensation Seeking Scale to measure risk-taking behaviour within a sexual context which consists of 11 items. Responses were anchored on a four-point Likert scale ranging from 1 = *not at all like me* to 4 = *very much like me*. Previous research conducted among American college students reported scale reliability of .85 (Perry *et al.*, 2007). Reliability in this study was determined using Cronbach's alpha as .88 for the sexual sensation seeking scale.

Online Deception: Items relating to online deception were identified and taken from research conducted by Capri and Gorski (2006), and Stieger, Eichinger, and Honeder (2009). The scale was thus designed by me and consists of the following items: ‘When on the internet, I have lied about the following topics’, my relationship status, my sexuality (pretend to be heterosexual /homosexual /bisexual), and my physical appearance; and ‘I am honest about my age’ and ‘I am honest about my occupation’ (scaled as: 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *more times than not*, 5 = *always*). As a result, no previous reliability coefficients exist for the specific scale. For this study, reliability was determined using Cronbach’s alpha as .64.

Online Self-Disclosure: The Real Me Questionnaire (Amichai-Hamburger *et al.*, 2002) consists of a 4-item measure which pertains to whether participants self-disclose to their friends via the internet more, compared to face-to-face encounters. The first two items are scaled dichotomously (1 = *yes* and 2 = *no*), and the remaining two items were scaled on a 7-point likert scale (1 = *not at all* and 7 = *a great deal*). Previous research conducted among Israeli chatroom users reported scale reliability of .79 (Amichai-Humberger *et al.*, 2002). Reliability in this study was determined using Cronbach’s alpha as .82 for the real me questionnaire.

Sexuality: The Klein’s Sexual Orientation Grid (Klein, 1993) was used and consists of twenty-one response items. The grid comprised of seven horizontal items pertaining to sexual attraction, sexual behaviour, sexual fantasies, emotional preferences, lifestyle preference, and self-identification. The three vertical items divide each horizontal item in three time related categories, namely; past, present and ideal. The scale was modified by dividing the second horizontal item, sexual behaviour, into two distinct questions; ‘with whom have you actually had penetrative sex?’, and ‘with whom have you had non-penetrative sex with?’ All answers were

anchored on a seven-point likert scale. The first six items were anchored and ranged from 1 = *other sex only* to 7 = *same sex only*. Item seven and eight were anchored ranging from 1 = *heterosexual only* and 7 = *gay/lesbian only*. Reliability in this study was determined using Cronbach's alpha as .93 for past, .94 for present, and .95 for ideal.

Sexual Risk Behaviour: Based on sexual-risk literature, Mashegoane *et al.* (2002) used commonly asked items to assess sexual risk behaviour. The items related to number of sexual partners in the past three and six months, and the duration of friendship before engaging in sexual intercourse (scaled on a 3-point scale; 1 = *less than 7 days*, 2 = *2 to 4 weeks*, and 3 = *more than 1 month*). The rest of the items were scaled dichotomously (1 = *yes* and 2 = *no*); and relate to sexual intercourse while under the influence of alcohol or narcotics, contracting sexual transmitted disease or infections, and the respondent's condom use. For the pilot study, all sexual risk behaviour items were entered and by using the Scale if Item Deleted function in SPSS, acceptable reliability was achieved based on the following three items: 'During the past 3 months, I have never had sexual intercourse while under the influence of alcohol/narcotics'; 'During the past 12 months, I have had sexual intercourse under the influence of alcohol/narcotics'; and 'I used a condom during my first sexual penetration activity'. After determining low reliability ($\alpha = .44$) for the final data analysis among a sample of 336 participants, reliability was recalculated by swopping out 'I used a condom during my first sexual penetration activity' and replacing it with 'In the past, I have contracted a sexually transmitted disease/ infection'. This resulted in an acceptable scale reliability ($\alpha = .64$).

Internet Use: A three item measure was used to identify time spent on the internet and primary internet usage. Respondents were asked the following question: ‘How much time do you spend on the internet for work purposes per day’; ‘How much time do you spend on the internet for sexual purposes per day’; and ‘How much time do you spend on the internet for personal purposes other than sexual in an average day (respondents were allowed to insert an estimated numerical value for hours and minutes). With regards to time spent on the internet per day, the measure was divided into three distinct time categories, namely; hours spent on the internet for work purpose (work hours), hours spent on the internet associated with online sexual pursuits (sexual hours), and hours spent on the internet for personal purposes (personal hours). Respondents also answered the following item: ‘With regards to personal internet use, I spend most of my time online...’ (response options were as follows: 1 = *chatting*, 2 = *downloading*, 3 = *social networking*, 4 = *online dating*, 5 = *information browsing/ researching*). Two items measured whether or not participants met others online which resulted in face-to-face contact: ‘I have met people in an online environment, which has resulted in a face to face encounter (scaled as 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *more times than not*, 5 = *always*); and ‘I have met others online for sexual online purposes which has extended to face to face sexual activities’ (scaled as 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *more times than not*, 5 = *always*).

3.5 *Data Analysis*

All statistical analyses were conducted using SPSS 20 (IBM Corp., 2011)

3.5.1 First Stage of Analysis: Reliability and Multiple Regression Analysis

High scores on the following predictor measures of sexual sensation seeking indicated higher amounts of the constructs measure; extraversion, agreeableness, conscientiousness, neuroticism, openness, sexual compulsivity, online deception, online self-disclosure, and sexual risk behaviour. For sexuality, measured by Klein's GRID, high scores tend to indicate an increased tendency towards homosexuality, whereas low scores indicate a prevalence of heterosexuality. With regards to sexual sensation seeking, high scores reflect a greater tendency to engage in sexual sensation seeking behaviour.

As previously mentioned, reliability analysis was explored for each construct using Cronbach's alpha. Thereafter, composite measures (using mean scores) were created for each independent predictor variable. Finally, multiple regression analysis was employed to address the first research question, i.e. what are the statistically significant predictors of sexual sensation seeking. All predictor constructs were regressed as multiple variables on sexual sensation seeking, used as the dependent variable, at a .05 level of significance. After the literature was reviewed, a clear theoretical model was not identified, nor has any previous researchers analysed the statistical significance of all twelve sexual sensation seeking variables simultaneously. As a result, the enter method of multiple regression analysis was used to identify statistical predictors of sexual sensation seeking due to the lack of a theoretical model (Brace, Snelgar, & Kemp, 2012), as well as the enter method's ability to analyze the variables regardless of the order in which the variables are entered into the regression equation (Tranmer & Elliot, n.d.).

3.5.2 Second Stage of Analysis: Product-Term Regression Analysis

After identifying the statistical predictors of sexual sensation seeking, product-term regression analyses were conducted in order to examine whether or not the three third variables (hours spent on the internet for work purpose, hours spent on the internet associated with online sexual pursuits, and hours spent on the internet for personal purposes) influenced the relationship between sexual sensation seeking and its statistical predictors.

For each statistically significant predictor variable, two sets of regression analyses, collectively referred to as product-term regression analyses, were conducted following the procedure outlined by Pretorius (2012). As such, product-term multiple regression analyses was conducted to answer the third research objective i.e. what role does the amount of hours spent online play, as a third variable influence, on the relationship between the statistically significant predictors of sexual sensation seeking and sexual sensation seeking?

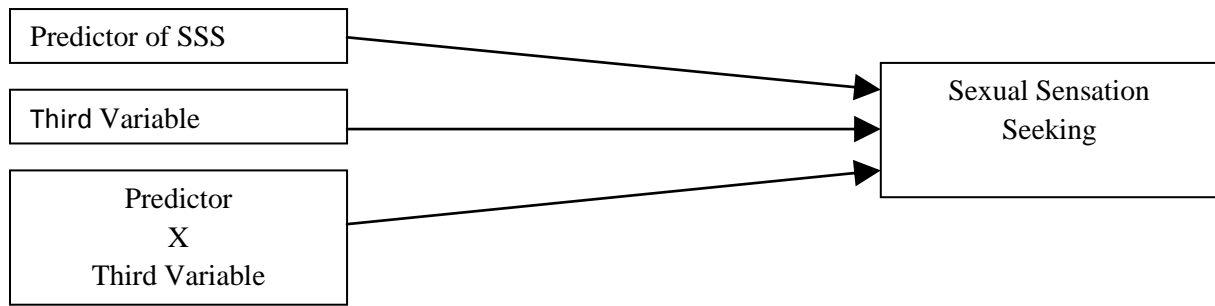
The third variable was categorised into the following separate variables: hours spent on the internet for work purpose; hours spent on the internet associated with online sexual pursuits; and hours spent on the internet for personal purposes, such as; research, chatting, downloading, social networking, and any other activities that do not relate to sexual stimulation. These three variables were labelled as 'work hours,' 'personal hours,' and 'sexual hours'. Thereafter, deviation scores were created for each statistically significant predictor variable of sexual sensation seeking. The deviation scores were computed into a new variable by subtracting each predictor variable from its corresponding mean score. Similarly, deviation scores were computed into a new variable by subtracting each third variable from its corresponding mean. The next step

was to create the interaction variable by multiplying each predictor variable's deviation score with each third variable's deviation score. As such, each predictor variable's deviation score was multiplied with each of the three third variable's deviation score.

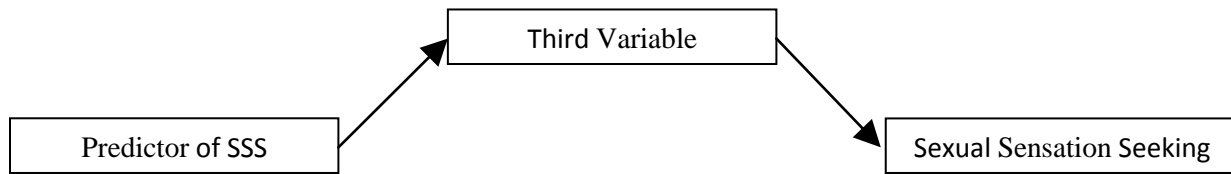
Two sets of regression analyses, each consisting of three steps, were conducted to investigate the third variable's influence on the relationship between each statistically significant predictor of sexual sensation seeking and sexual sensation seeking, as the outcome. Sexual sensation seeking was used as the dependent variable for all regression analyses. For the first set of regression analyses, the first step was to enter a statistically significant predictor as the independent variable. In the second step, the same statistically significant predictor was entered as the independent variable again, as well as a third variable. The third step for the first set of regression analyses required that the previously computed interaction of the two variables used in step two be entered as the independent variable. The second set of regression analyses was a duplication of the first, but instead of using the statistically significant predictor as the independent variable in step one, the predictor variable is replaced with the third variable. As a result, for each statistically significant predictor of sexual sensation seeking, the above procedure was repeated three times; once for each of the three third variables, namely work hours, sexual hours, and personal hours.

There are five pathways in which the third variable can influence the relationship between sexual sensation seeking and its statistical predictors. The first pathway in which the third variable can influence the relationship between sexual sensation seeking and its statistical predictors is via a direct effect. In order to identify a direct effect, the predictor and or the third variable must significantly predict sexual sensation seeking in the first and second steps of the

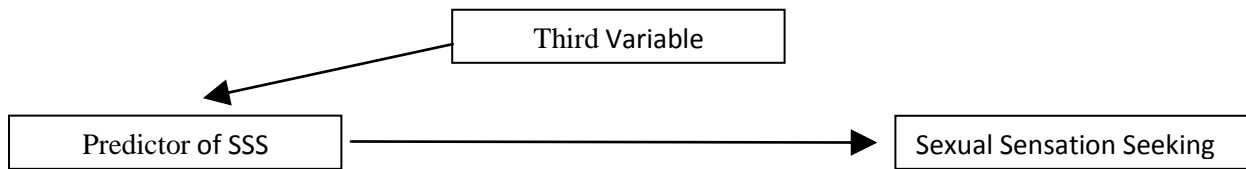
product regression analyses, and the product-term must be non-significant. The second pathway, in which the third variable can influence the relationship between sexual sensation seeking and its statistical predictors, is through moderation. A moderating effect occurs when the third variable interacts with the predictor and influences sexual sensation seeking; as indicated by a significant product-term (interaction) in the third step of the analyses. In order to further evaluate the moderating effect, regression lines were calculated to compare participants who spent a high frequency of time online, with participants who spent a low frequency of time online. The third pathway, in which the third variable can influence the relationship between sexual sensation seeking and its statistical predictors, is indirectly. An indirect effect occurs when the third variable is significant in the first step of the analyses but is non-significant in the second step of the product-term analyses. When an indirect effect occurs, the third variable influences the predictor, which in turn affects sexual sensation seeking. The fourth pathway, in which the third variable can influence the relationship between sexual sensation seeking and its statistical predictors, is through mediation. A mediating effect occurs when the predictor is significant in the first step of the analyses but is non-significant in the second step of the product-term analyses. When mediation occurs, the third variable acts as a mechanism through which the predictor affects sexual sensation seeking. Finally, when both predictor and third variable are not significant in the first step of the product-term analyses; no effect is reported. The pathways for moderation, indirect and mediation are summarized in Figure 1 and the data analysis process is summarized in Figure 2.



a) Moderator effect – Internet hours per week interacts with the predictor of sexual sensation seeking to influence sexual sensation seeking



b) Mediator effect – Internet hours per week as the mechanism through which the predictor of sexual sensation seeking influences sexual sensation seeking.



c) Indirect effect – Internet hours per week leads to the interpretation of the predictor of sexual sensation seeking in a certain way, which in turn affects sexual sensation seeking.

Figure 1: Illustration of moderator, mediator and indirect effects of third variable.

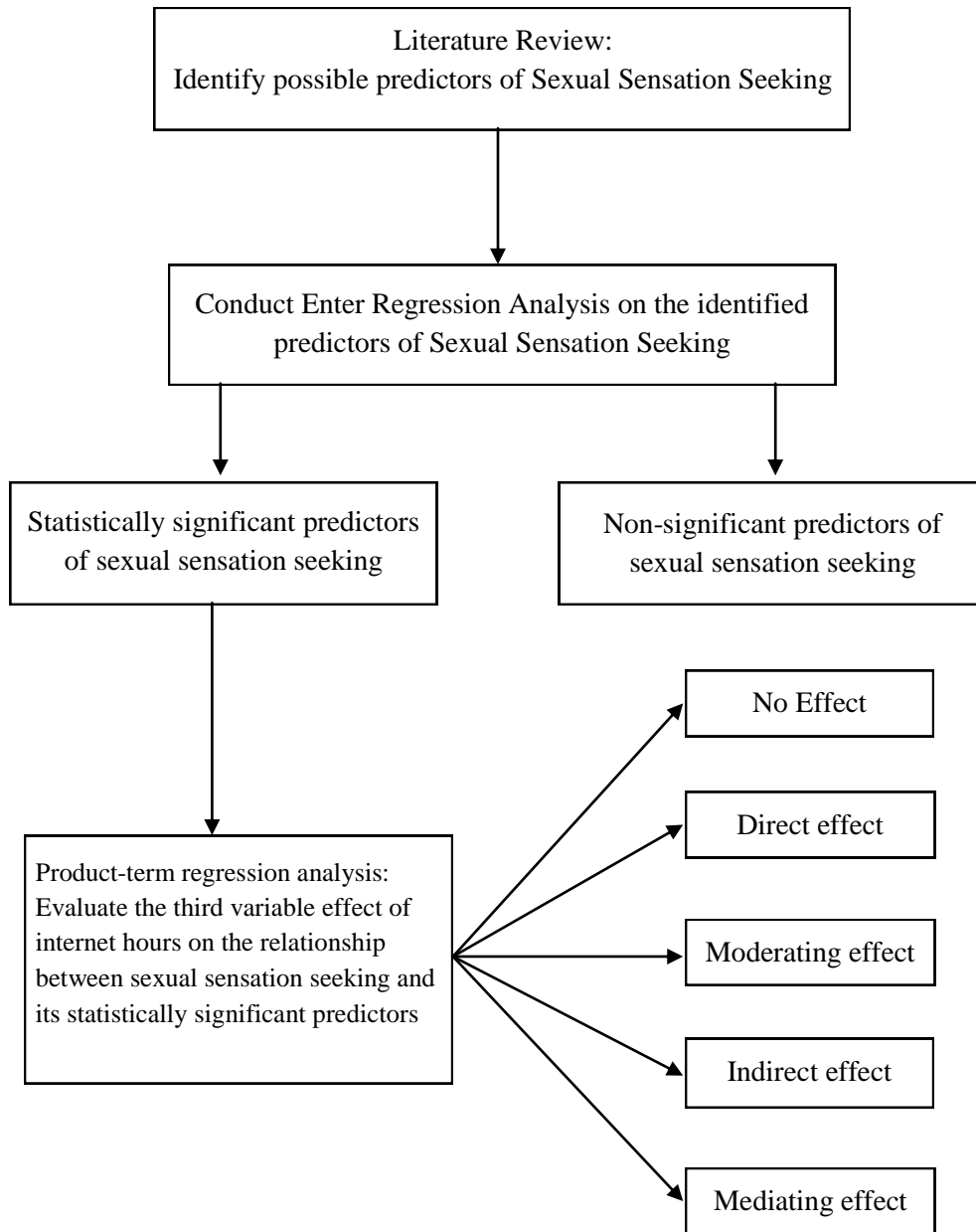


Figure 2: Graphical representation of the data-analysis process.

CHAPTER 4

RESULTS

The results obtained from the data are presented according to the analyses outlined in the research methods section (Chapter 3). Each section details the results obtained starting with the sample's demographic information. Thereafter, a detailed report is presented based on the statistical analyses of the twelve predictors. Finally, detail reports are presented with regards to the twenty-one separate product-term regression analyses conducted in order to evaluate the effect that three third variables (hours spent on the internet for work purpose, hours spent on the internet associated with online sexual pursuits, and hours spent on the internet for personal purposes) has on the relationship between sexual sensation seeking and its statistical predictors. The chapter concludes with a summary table of the third variable effect that each of the three third variables have on the relationship between sexual sensation seeking and its statistical predictors.

4.1 *Sample*

Data was collected from 776 participants who attempted the online questionnaire, either partially or completely. Of these participants, 336 fully completed the online questionnaire which comprised of the final sample, thus resulting in a response rate of 43.3%. Demographically, the mean age of participants was 23.60 years ($SD = 8.44$), ranging from 18 to 70 years. The majority recruited for the study were female (51.1%), Caucasian (70.8%), heterosexual (71.7%), and single (53.3%). More than one-third (34.8 %) of respondents reported that they believed they had no chance of contracting a sexually transmitted disease or infection. Demographic characteristics are summarized in Figures 3 to 6.

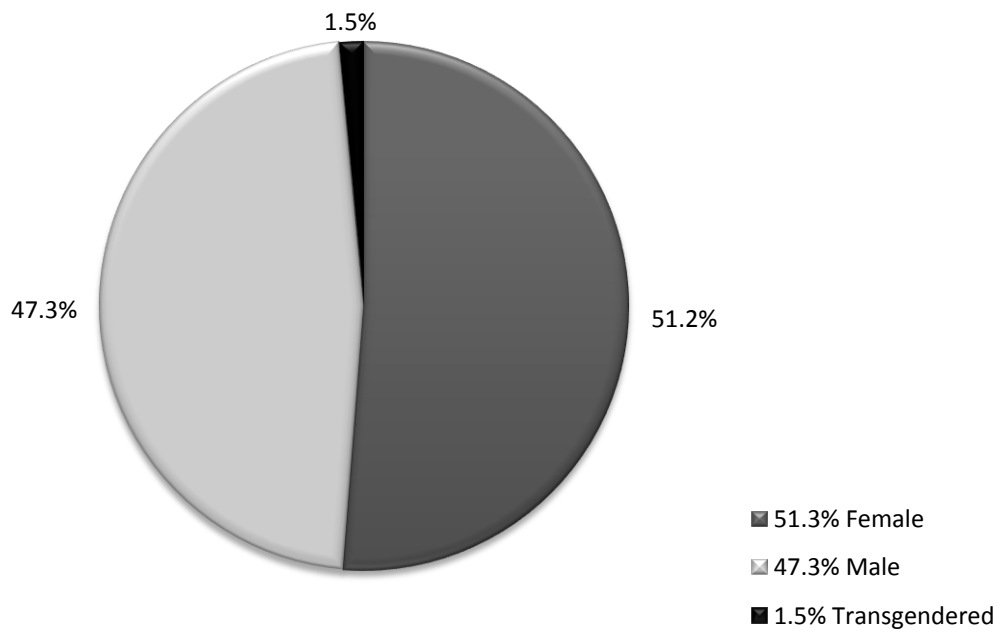


Figure 3: Percentages of male, female and transgendered participants in the sample.

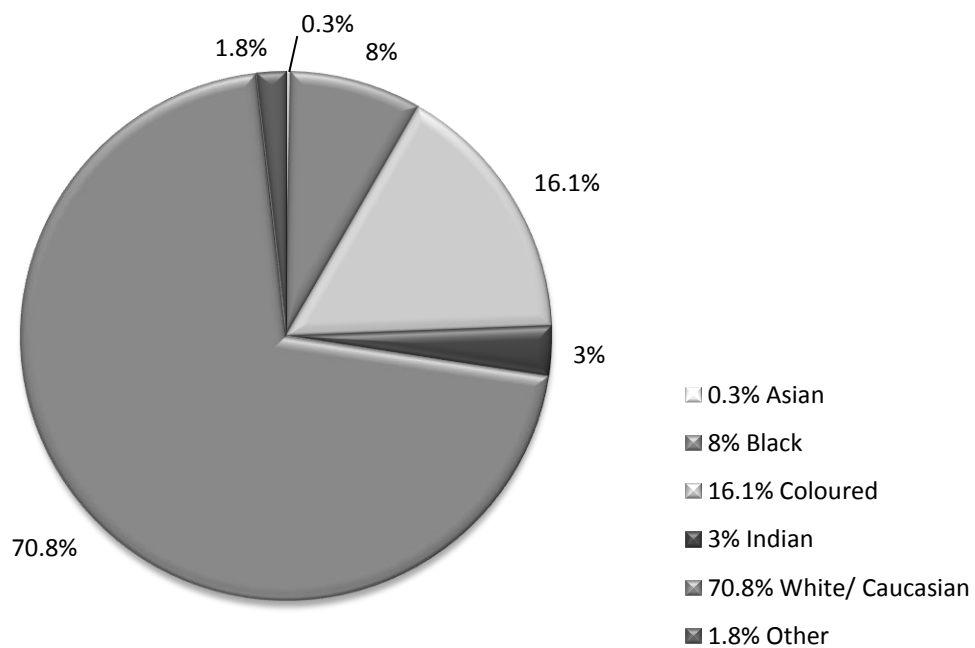


Figure 4: Percentages of different racial groups.

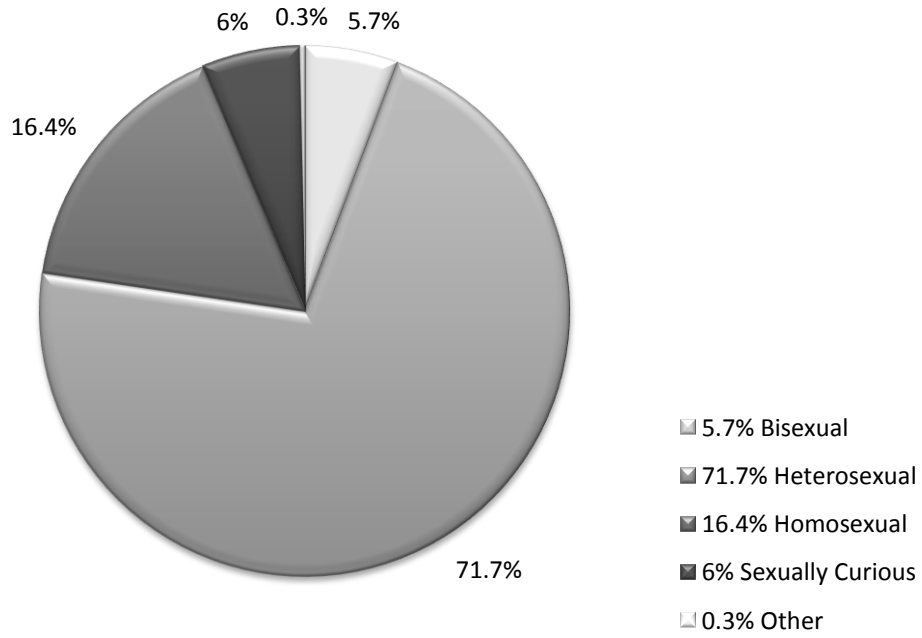


Figure 5: Percentages of participant's self-identified sexual orientation.

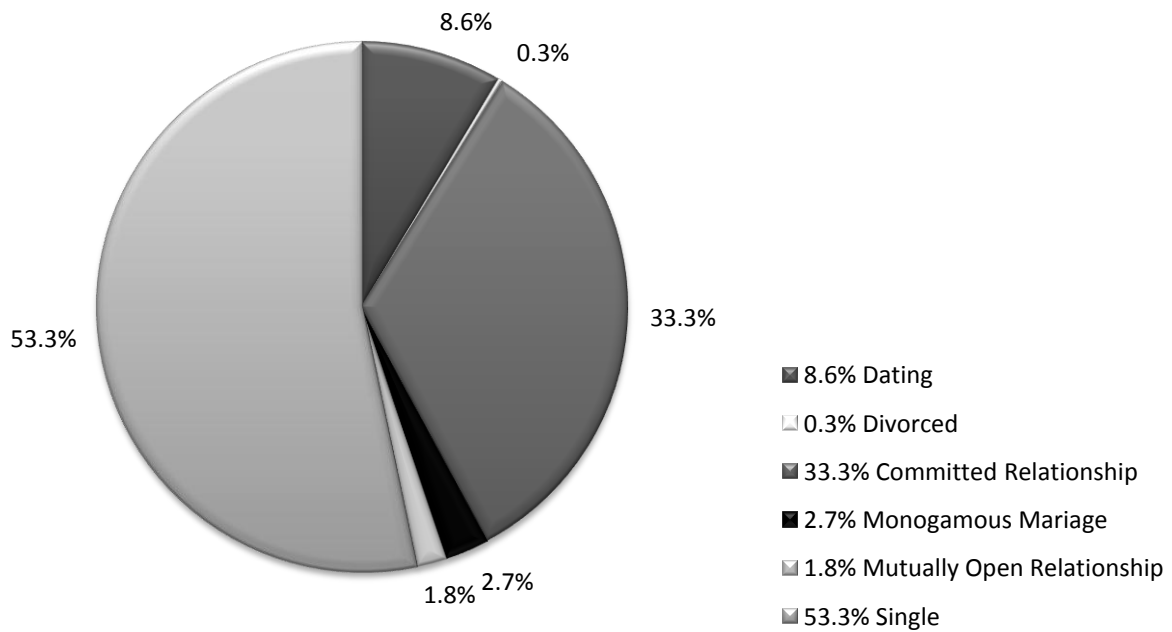


Figure 6: Percentages of participant's different relationship statuses.

In terms of sexual behaviour, two-thirds (66.7%) of the sample reported engaging in penetrative sex and more than three-quarters (76.8%) engaged in non-penetrative sex. On average, 69.9% ($n = 234$) and 16.4% ($n = 55$) of respondents maintained a friendship of more than a month before engaging in opposite-sex and same-sex intercourse, respectively. With regards to substance use and sexual intercourse, 25.6% engaged in sex under the influence of alcohol or narcotics during the past 3 months and 35.7% during the past 12 months. The majority of respondents (58.9%) reported that they used a condom when they engaged in sexual intercourse for the first time in their lives. When asked about sexually transmitted infections and diseases; 19 (5.7%) reported contracting a sexual transmitted disease or infection in the past and 4 (1.2%) reported that they were currently infected with a sexual transmitted disease or infection. Sexual risk behaviour characteristics are summarized in Table 3.

Table 3: Sexual behaviour characteristics of sample ($N = 336$).

Sexual Behavioural Characteristics	Frequency	Percentage
Have you ever had penetrative sexual intercourse?		
Yes	224	66.7
No	112	33.3
Have you ever had non-penetrative sexual intercourse?		
Yes	258	76.8
No	78	23.2
Chances of contracting STI/STD		
100% Highly Unlikely	117	34.8
75% Unlikely	60	17.9
50% Unlikely	21	6.3
25% Unlikely	50	14.9
0% Unlikely	88	26.2
Duration of friendship before opposite-sex intercourse		
Less than 7-days	21	6.3
2 to 4 weeks	37	11
More than a month	234	69.6
I am homosexual and do not engage in opposite-sex intercourse	44	13.1

Duration of friendship before same-sex intercourse		
Less than 7-days	30	8.9
2 to 4 weeks	19	5.7
More than a month	55	16.4
I am heterosexual and do not engage in same-sex intercourse	232	69
Sex while under the influence of substances (Past 3 months)		
Yes	86	25.6
No	250	74.4
Sex while under the influence of substances (Past 12 months)		
Yes	120	35.7
No	216	64.3
Would you describe yourself as someone who takes risks?		
Always	14	4.2
Almost always	29	8.8
Sometimes	175	52.1
Rarely	105	31.3
Never	13	3.9

With regards to sexual orientation, participants who self-identified as heterosexual ($n = 241$) reported that they were attracted to the opposite sex only, however thirty participants reported that to some degree, they were attracted to the other sex as well. Thirty-four of the self-identified homosexual participants ($n = 55$) reported that they were attracted to members of the same sex only, however twenty-one participants reported that to some degree they were attracted to members of the opposite sex as well. Additionally, twelve self-identified heterosexual participants reported that they had penetrative sex with members of the same sex, three of these self-identified heterosexual participants reported that they only have had intercourse with members of the same sex. Eighteen self-identified homosexual participants reported that they had penetrative sex with members of the opposite sex, and three of these participants only had sex with members of the same sex. With regards to non-penetrative sex, twenty-five self-identified heterosexual participants reported that they engaged in such behaviour with members of the same sex, and eighteen self-identified homosexual participants reported engaging in non-penetrative sex with members of the opposite sex.

To assess the duration that participants spent online, three categories were created with regards to hours per day. The mean hours spent on the internet for work purpose (work hours) were 2.87 ($SD = 2.27$), mean hours spent on the internet associated with online sexual pursuits (sexual hours) was 0.46 ($SD = 1.11$) and mean hours spent on the internet for personal purposes (personal hours) was 2.39 ($SD = 2.24$). The largest proportion of participants (46.7%) reported spending most of their time social networking, followed by researching (32.1%), downloading (10.7%), chatting (7.1%), watching porn (1.8%), and online dating (1.5%). With regards to meeting people online, 161 participants (22.6% rarely, 17% sometimes, 8% more than not, and 0.3% always) met their online friends in an offline, real-world environment, while the majority (52.1%) never participated in this behaviour. When asked if participants met people online which resulted in offline sexual activities, 79.2% reported that they had never, while 20.8% either rarely (8.9%), sometimes (8.9%), more than not (2.7%), and always (0.3%) met people online which resulted in offline sexual activities.

4.2 *Multiple Regression Analysis: Statistically Predicting Sexual Sensation Seeking*

Based on the literature, I identified twelve widely researched variables associated with sexual sensation seeking. To identify the statistical predictors of sexual sensation seeking, multiple regression analysis was used to evaluate the independent variable's ability to significantly predict sexual sensation seeking. Sexual sensation seeking was entered in as the dependent variable. Extraversion, agreeableness, conscientiousness, neuroticism, openness, sexual risk, online deception, online self-disclosure, Klein's three sexual orientation grids, and sexual compulsivity were entered together as the independent variables. The results of the regression analysis indicated that the model accounts for 50.5% of the variance ($R^2 = .50$, $F(12,$

323) = 27.50, $p < .01$). Extraversion, agreeableness, conscientiousness, neuroticism, sexual compulsivity, online self-disclosure, and sexual risk behaviour significantly ($p < .05$) predicted sexual sensation seeking. Openness, online deception, and Klein's sexual orientation grids did not significantly ($p > .05$) predict sexual sensation seeking. Results of the multiple regression analysis, using the enter method, are presented in Table 4 below.

Table 4: Multiple regression analysis using sexual sensation seeking as the dependent variable and the twelve predictors as the independent variables.

Predictor Variables	Beta	t	Sig
Extraversion	0.13	3.02	.00
Agreeableness	-0.13	-3.09	.00
Conscientiousness	-0.10	-2.31	.02
Neuroticism	-0.12	-2.78	.01
Openness	0.04	1.03	.31
Sexual Compulsivity	0.43	9.74	.00
Sexual Risk Behaviour	0.29	6.96	.00
Online Self-Disclosure	0.10	1.10	.04
Online Deception	-0.02	-0.36	.72
Klein's Grid: Past	0.26	1.75	.08
Klein's Grid: Present	-0.07	-0.45	.66
Klein's Grid: Ideal	-0.04	-0.27	.78

4.3 Product-Term Regression Analyses

Twenty-one product-term regressions were conducted (Pretorius, 2012) in order to evaluate the influence that the three third variables (hours spent on the internet for work purpose, hours spent on the internet associated with online sexual pursuits, and hours spent on the internet for personal purposes) had on the relationship between sexual sensation seeking and each of the seven identified statistical predictors of sexual sensation seeking.

4.3.1 Internet Hours associated with Work

In order to determine the third variable effect that the amount of hours spent online for work purposes (work hours) has on the relationship between extraversion and sexual sensation seeking, two separate analyses were conducted. In the first step of the analyses extraversion was entered as the independent variable, extraversion and work hours were each entered independently in the second step, and the product-term between extraversion and work hours was entered in the third step. The second regression analysis repeated the first analysis, with the exception of entering work hours in the first step. The results are presented in Table 5.

Table 5: Product-term regression analysis testing whether work hours on the internet as a third variable influences the relationship between extraversion and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Extraversion	1, 334	.04	3.56	0.19**
Work Hours ^b	1, 334	.02	2.84	0.15**

Extraversion	2, 333		3.56	0.19**
Work Hours	2, 333	.06	2.84	0.15**

Extraversion X Work Hours	3, 332	.07	2.17	0.12*

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

* $p < 0.05$

Direct effects were reported between extraversion and sexual sensation seeking ($t(1, 334) = 3.56, p < .01$), as well as work hours and sexual sensation seeking ($t(1, 334) = 2.84, p < .01$). However, both extraversion and work hours stayed significant in the second step of the analysis, which indicated no mediation or indirect effects played a role in the relationship between extraversion and sexual sensation seeking. Furthermore, the interaction effect between extraversion and work hours was significant ($t(3, 332) = 2.17, p < .05$). This indicates that work

hours as a third variable moderated the relationship between extraversion and sexual sensation seeking

To further analyse the moderation effect, regression lines were compared between two groups; participants with a high frequency of work hours (at or above 75th percentile, N = 103) and those with a low frequency of work hours (at or below 25th percentile, N = 111) (Cohen & Cohen, 1975). The graph which compares low and high frequency of work hours spent online for the relationship between sexual sensation seeking and extraversion is shown in Figure 7.

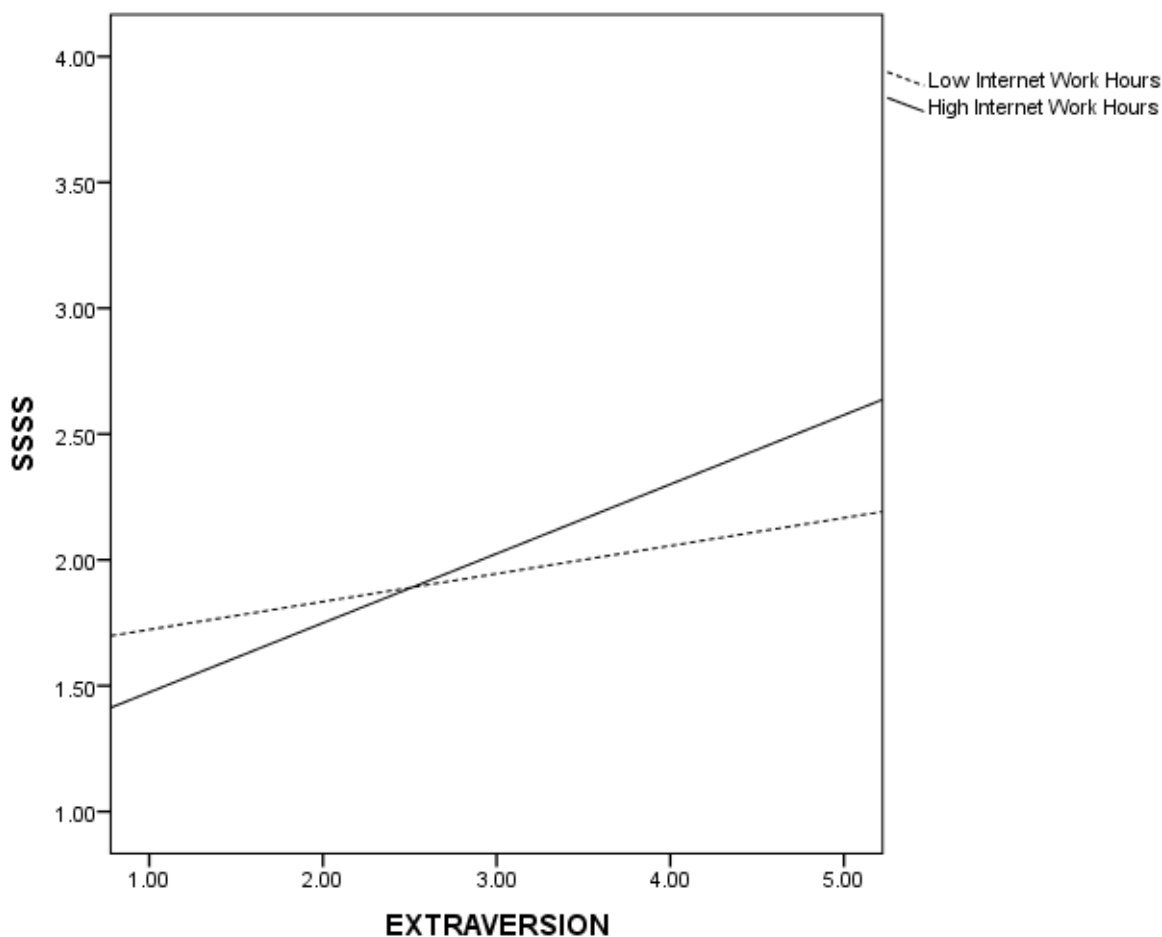


Figure 7: The regression lines for sexual sensation seekers and extraversion comparing high and low frequency of work hours spent online.

The regression line representing participants who had a high frequency of internet hours for work purposes (work hours) was steeper (slope = 0.28), compared to participants who spent less time on the internet for work purposes (slope = 0.11).

In order to determine the third variable effect that the amount of hours spent online for work purposes (work hours) has on the relationship between agreeableness and sexual sensation seeking, two separate analyses were conducted. Agreeableness was entered in the first step, work hours and agreeableness were entered together in the second step, and the interaction between agreeableness and work hours was entered in the third step. The second regression analysis was a repeat of the first, with the exception of entering work hours in the first step. The results are presented in Table 6.

Table 6: Product-term regression analysis testing whether work hours on the internet as a third variable influences the relationship between agreeableness and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Agreeableness	1, 334	.01	-1.91	-0.10
Work Hours ^b	1, 334	.02	2.84	0.15**

Agreeableness	2, 333		-1.76	-0.10
Work Hours	2, 333	.03	2.73	0.15**

Agreeableness X Work Hours	3, 332	.03	-0.05	-0.003

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Agreeableness does not directly predict sexual sensation seeking ($t(1, 334) = -1.91, p = .06$) and as a result there can be no third variable effects.

In order to determine the third variable effect that the amount of hours spent online for work purposes (work hours) has on the relationship between conscientiousness and sexual sensation seeking, two separate analyses were conducted. Conscientiousness was entered in the first step of the analysis. Both conscientiousness and work hours were entered in the second step and the product-term of conscientiousness and work hours was entered in the third step. The second regression analysis was a repeat of the first, with the exception of entering work hours in the first step instead of conscientiousness. The results are shown in Table 7.

Table 7: Product-term regression analysis testing whether work hours on the internet as a third variable influences the relationship between conscientiousness and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Conscientiousness	1, 334	.04	-3.64	0.20**
Work Hours ^b	1, 334	.02	2.83	0.15**
.....				
Conscientiousness	2, 333		-3.81	-0.20**
Work Hours	2, 333	.06	3.05	0.16**
.....				
Conscientiousness X Work Hours	3, 332	.07	0.98	0.05

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Conscientiousness ($t(1, 334) = -3.64, p < .01$) and work hours directly predicted sexual sensation seeking ($t(1, 334) = 2.83, p < .01$), however these variables were not reduced to non-significance. As a result, there was no mediation or indirect effect associated with the third variable. Additionally, the interaction between conscientiousness and work hours was not significant ($t(3, 332) = 0.98, p = .33$) which indicates that there are no moderating effects either. The third variable (work hours) thus has a direct effect on sexual sensation seeking and no effect on the relationship between conscientiousness and sexual sensation seeking.

In order to determine the third variable effect that the amount of hours spent online for work purposes (work hours) has on the relationship between neuroticism and sexual sensation seeking, two separate analyses were conducted. Neuroticism was entered in the first step, neuroticism and work hours in the second step and the product-term for neuroticism and work hours was entered in the third step. The second regression analysis was a repeat of the first, with the exception of entering work hours in the first step. The results are presented in Table 8.

Table 8: Product-term regression analysis testing whether work hours on the internet as a third variable influences the relationship between neuroticism and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Neuroticism	1, 334	.00	-0.76	-0.04
Work Hours ^b	1, 334	.02	2.83	0.15**

Neuroticism	2, 333		-0.92	-0.05
Work Hours	2, 333	.03	2.88	0.16**

Neuroticism X Work Hours	3, 332	.03	0.63	0.04

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Neuroticism does not directly predict sexual sensation seeking ($t(1, 334) = -0.76, p = .45$) and as a result there can be no third variable effects.

In order to determine the third variable effect that the amount of hours spent online for work purposes (work hours) has on the relationship between sexual compulsivity and sexual sensation seeking, two separate analyses were conducted. For the first analysis, sexual compulsivity was entered in step one. Sexual compulsivity and work hours was entered together in the second step and the product of these two terms were entered in the third step. The second

regression analysis was a repeat of the first, with the exception of entering work hours in the first step instead of sexual compulsivity. The results are shown in Table 9.

Table 9: Product-term regression analysis testing whether work hours on the internet as a third variable influences the relationship between sexual compulsivity and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Sexual Compulsivity	1, 334	.31	12.25	.56**
Work Hours ^b	1, 334	.02	2.83	.15**

Sexual Compulsivity	2, 333		11.87	.55**
Work Hours	2, 333	.31	1.37	0.06

Sexual Compulsivity X Work Hours	3, 332	.31	-0.28	-0.01

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Sexual compulsivity and work hours directly influence sexual sensation seeking. The interaction between sexual compulsivity and work hours was non-significant; therefore there are no moderating effect between sexual compulsivity and sexual sensation seeking. In the second step of the analyses, work hours was reduced to non-significance ($t(2, 333) = 1.37, p = .17$) when entered together with sexual compulsivity. As a result, personal hours indirectly influenced sexual sensation seeking through sexual compulsivity.

In order to determine the third variable effect that the amount of hours spent online for work purposes (work hours) has on the relationship between sexual risk behaviour and sexual sensation seeking, two separate analyses were conducted. Sexual risk behaviour was entered in the first step, sexual risk behaviour and work hours were entered together in the second step, and the product-term between sexual risk behaviour and work hours were entered in the third step. .

The second regression analysis was a repeat of the first, with the exception of entering work hours in the first step instead of sexual risk behaviour. Results are shown presented in Table 10.

Table 10: Product-term regression analysis testing whether work hours on the internet as a third variable influences the relationship between sexual risk behaviour and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Sexual Risk Behaviour	1, 334	.16	8.19	0.41**
Work Hours ^b	1, 334	.02	2.83	0.15**

Sexual Risk Behaviour	2, 333		8.14	0.40**
Work Hours	2, 333	.18	2.73	0.14**

Sexual Risk Behaviour X Work Hours	3, 332	.18	1.01	0.05

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Sexual risk behaviour significantly predicted sexual sensation seeking in the first step ($t(1, 334) = 8.19, p < .01$), and the second step ($t(2, 333) = 8.14, p < .01$). As a result, no mediation occurred. The third variable directly predicted sexual sensation seeking in both steps one ($t(1, 334) = 2.83, p < .01$) and in step two ($t(2, 333) = 2.73, p < .01$), which indicated that work hours do not indirectly effect the relationship between sexual risk behaviour and sexual sensation seeking. The interaction between sexual risk behaviour and work hours was also not significant; therefore there are no moderating effects either. The third variable (work hours) thus has a direct effect on sexual sensation seeking and no effect on the relationship between sexual risk behaviour and sexual sensation seeking.

In order to determine the third variable effect that the amount of hours spent online for work purposes (work hours) has on the relationship between online self-disclosure and sexual sensation seeking, two separate analyses were conducted. Online self-disclosure was entered in

the first step of the analyses, online self-disclosure and work hours were entered together in the second step and the interaction between online self-disclosure and work hours were entered in the third step of the analyses. The second analysis repeated these steps, but instead of entering online self-disclosure in the first step, work hours were entered. The results are shown in Table 11.

Table 11: Product-term regression analysis testing whether work hours on the internet as a third variable influences the relationship between online self-disclosure and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Online Self-Disclosure	1, 334	.10	6.04	0.31**
Work Hours ^b	1, 334	.02	2.83	0.15**
.....				
Online Self-Disclosure	2, 333		5.58	0.30**
Work Hours	2, 333	.12	1.78	0.09
.....				
Online Self-Disclosure X Work Hours	3, 332	.14	3.71	0.20**

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

The results indicate that online self-disclosure directly and significantly predicts sexual sensation seeking ($t(1, 334) = 6.04, p < .01$) in step one, and in step two of the analyses ($t(2, 333) = 5.58, p < .01$). This indicated that there were no mediating effects. The second analysis revealed that work hours significantly predicted sexual sensation seeking in the first step ($t(1, 334) = 2.83, p < .01$), but was reduced to non-significance in the second step ($t(1, 334) = 1.78, p = .08$) which indicated that personal hours indirectly influenced sexual sensation seeking through sexual compulsivity. However, the product-term between online self-disclosure and work hours was significant ($t(3, 332) = 3.71, p < .01$). This indicates that work hours as a third variable moderated the relationship between online self-disclosure and sexual sensation seeking

To examine the moderation effect, regression lines were compared between participants with a high frequency of work hours (at or above 75th percentile, N = 103) and those with a low frequency of work hours (at or below 25th percentile, N = 111) (Cohen & Cohen, 1975). The regression lines are shown in Figure 8.

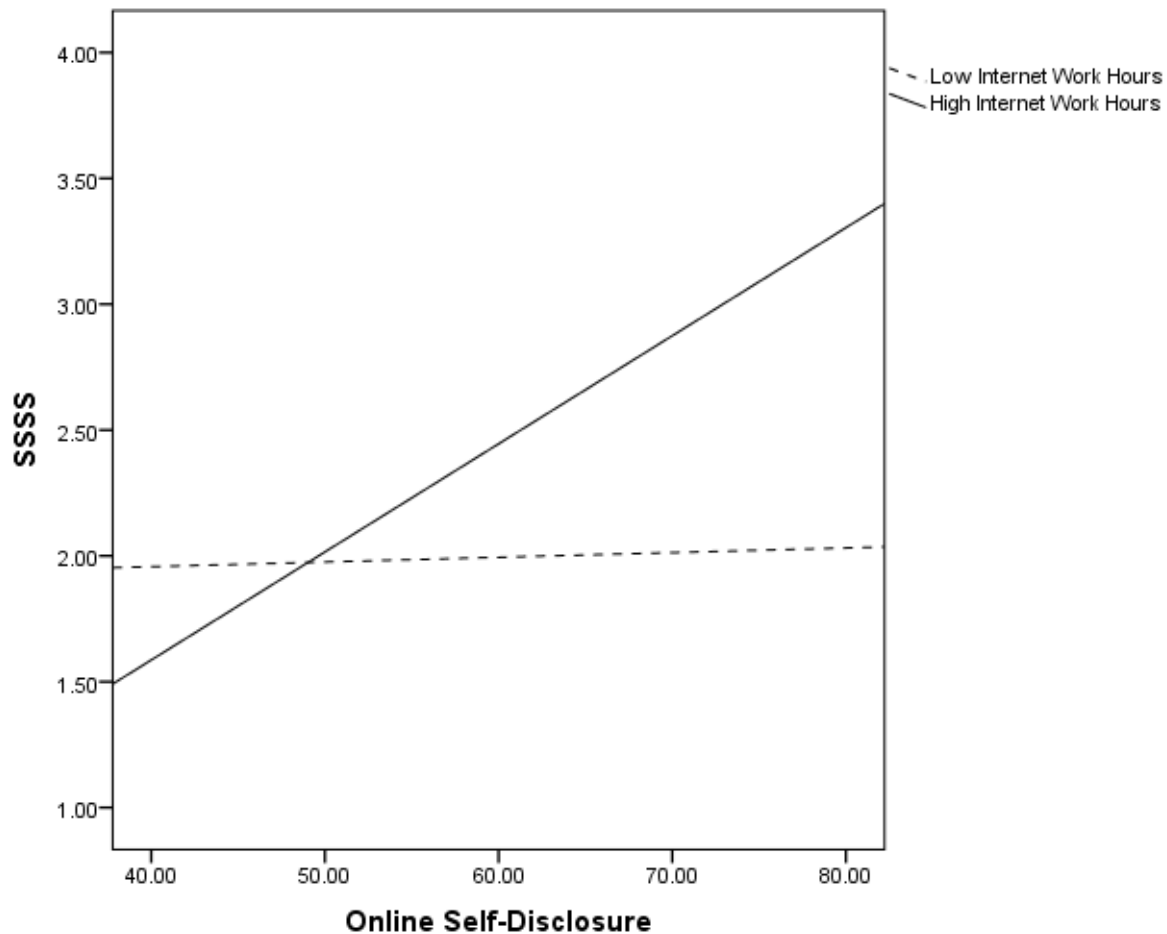


Figure 8: The regression lines for sexual sensation seekers and online self-disclosure comparing high and low frequency of work hours spent online.

The regression line representing participants who had a high frequency of internet hours for work purposes (work hours) was much steeper (slope = 0.04), compared to participants who spent less time on the internet for work purposes (slope = 0.002).

4.3.2 Internet Hours dedicated to Sexual Pursuits

Two separate sets of regression analyses were done for each statistical predictor in order to evaluate the effect that the third variable of hours spent on the internet associated with online sexual pursuits (sexual hours) had on the relationship between sexual sensation seeking and each of the seven predictor variables of sexual sensation seeking. Each predictor variable was entered in the first step, the predictor and sexual hours were entered together in the second step, and the product-term between the predictor and sexual hours were entered in the third step. The second analysis repeated these three steps with the exception of entering sexual hours in the first step, instead of the statistical predictor variable.

In order to determine the third variable effect that the amount of hours dedicated to online sexual pursuits (sexual hours) has on the relationship between extraversion and sexual sensation seeking, two separate analyses were conducted. In the first step of the analyses extraversion was entered as the independent variable, extraversion and sexual hours were each entered independently in the second step, and the product-term between extraversion and sexual hours was entered in the third step. The second regression analysis repeated the first analysis, with the exception of entering sexual hours in the first step. The results are presented in Table 12.

Table 12: Product-term regression analysis testing whether sexual hours on the internet as a third variable influences the relationship between extraversion and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Extraversion	1, 334	.04	3.56	0.19**
Sexual Hours ^b	1, 334	.11	6.56	0.34**
.....				
Extraversion	2, 333		3.77	0.19**
Sexual Hours	2, 333	.15	6.68	0.34**
.....				
Extraversion X Sexual Hours	3, 332	.15	0.54	0.03

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Extraversion directly predicted sexual sensation seeking ($t(1, 334) = 3.56, p < .01$), but was not reduced to non-significance in the second step of the analyses, therefore sexual hours did not mediate the relationship between extraversion and sexual sensation seeking. Similarly, sexual hours significantly predicted sexual sensation seeking ($t(1, 334) = 6.56, p < .01$), and remained significant in the second step of the analyses. This indicates that there were no mediating or indirect effects as a result of the third variable. Furthermore, the product-term of extraversion and sexual hours was not significant ($t(3, 332) = 0.54, p = .59$) which indicates that there were no moderating influences caused by sexual hours spent online and the relationship between extraversion and sexual sensation seeking. The third variable (sexual hours) thus has a direct effect on sexual sensation seeking and no effect on the relationship between extraversion and sexual sensation seeking.

In order to determine the third variable effect that the amount of hours spent online for sexual purposes (sexual hours) has on the relationship between agreeableness and sexual sensation seeking, two separate analyses were conducted. Agreeableness was entered in the first step of the analyses, agreeableness and sexual hours were entered together in the second step and

the interaction between agreeableness and sexual hours were entered in the third step of the analyses. The second analysis repeated these steps, but instead of entering agreeableness in the first step, sexual hours replaced agreeableness. The results are shown in Table 13 below.

Table 13: Product-term regression analysis testing whether sexual hours on the internet as a third variable influences the relationship between agreeableness and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Agreeableness	1, 334	.01	-1.91	-0.10
Sexual Hours ^b	1, 334	.12	6.56	0.34**

Agreeableness	2, 333		-1.66	-0.09
Sexual Hours	2, 333	.12	6.47	0.33**

Agreeableness X Sexual Hours	3, 332	.13	1.51	0.08

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Agreeableness does not directly predict sexual sensation seeking ($t(1, 334) = -1.91, p = 0.06$) and as a result there can be no third variable effects.

In order to determine the third variable effect that the amount of hours spent online for sexual purposes (sexual hours) has on the relationship between conscientiousness and sexual sensation seeking, two separate analyses were conducted. Conscientiousness was entered in the first step of the analyses, agreeableness and sexual hours were entered together in the second step and the interaction between agreeableness and sexual hours were entered in the third step of the analyses. The second analysis repeated these steps, but instead of entering agreeableness in the first step, sexual hours replaced conscientiousness. The results are shown in Table 14 below.

Table 14: Product-term regression analysis testing whether sexual hours on the internet as a third variable influences the relationship between conscientiousness and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Conscientiousness	1, 334	.04	-3.64	-0.20**
Sexual Hours ^b	1, 334	.11	6.56	0.34**
.....				
Conscientiousness	2, 333		-3.84	-0.19**
Sexual Hours	2, 333	.15	6.68	0.34**
.....				
Conscientiousness X Sexual Hours	3, 332	.16	1.31	0.07

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Conscientiousness ($t(1, 334) = -3.64, p < .01$) and sexual hours ($t(1, 334) = 6.56, p < .01$) directly predicted sexual sensation seeking; however these variables were not reduced to non-significance when entered together in the second step. As a result, there was no mediation or indirect effects associated with the third variable. Additionally, the interaction between conscientiousness and sexual hours was not significant ($t(3, 332) = 1.31, p = .19$) which indicated that there were no moderating effects either. The third variable (sexual hours) thus has a direct effect on sexual sensation seeking and no effect on the relationship between conscientiousness and sexual sensation seeking.

In order to determine the third variable effect that the amount of hours spent online for sexual purposes (sexual hours) has on the relationship between neuroticism and sexual sensation seeking, two separate analyses were conducted. Neuroticism was entered in the first step, neuroticism and sexual hours in the second step and the product-term between neuroticism and sexual hours was entered in the third step. The second analysis repeated these steps, but instead of entering neuroticism in the first step, sexual hours replaced neuroticism. The results are presented in Table 15.

Table 15: Product-term regression analysis testing whether sexual hours on the internet as a third variable influences the relationship between neuroticism and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Neuroticism	1, 334	.00	-0.76	-0.04
Sexual Hours ^b	1, 334	.02	6.56	0.34**
.....				
Neuroticism	2, 333		-0.91	-0.05
Sexual Hours	2, 333	.12	6.57	0.34**
.....				
Neuroticism X Sexual Hours	3, 332	.12	0.42	0.02

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Neuroticism did not directly predict sexual sensation seeking ($t(1, 334) = -0.76, p = .45$) and as a result there can be no third variable effects.

In order to determine the third variable effect that the amount of hours spent online for sexual purposes (sexual hours) has on the relationship between sexual compulsivity and sexual sensation seeking, two separate analyses were conducted. Sexual compulsivity was entered in the first step, sexual compulsivity and sexual hours in the second step and the product-term between sexual compulsivity and sexual hours was entered in the third step. The second analysis repeated these steps, but instead of entering neuroticism in the first step, sexual hours replaced sexual compulsivity. The results are presented in Table 16.

Table 16: Product-term regression analysis testing whether sexual hours on the internet as a third variable influences the relationship between sexual compulsivity and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Sexual Compulsivity	1, 334	.31	12.25	0.56**
Sexual Hours ^b	1, 334	.11	6.56	0.34**

Sexual Compulsivity	2, 333		10.60	0.50**
Sexual Hours	2, 333	.34	3.74	0.18**

Sexual Compulsivity X Sexual Hours	3, 332	.36	-3.14	-0.17**

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Both sexual compulsivity and sexual hours directly predict the sexual sensation seeking; $t(1, 334) = 12.25, p < .01$, and $t(1, 334) = 6.56, p < .01$, respectively. In step two of the analyses, both sexual compulsivity and sexual hours were not reduced to non-significance, which indicated that the third variable does not mediate or indirectly effect the relationship between hours spent online for sexual pursuits and sexual sensation seeking. Furthermore, the interaction between sexual compulsivity and sex hours was significant ($t(3, 332) = -3.14, p < .01$). This indicated that sexual hours as a third variable moderated the relationship between sexual compulsivity and sexual sensation seeking

To evaluate the interaction effects (Cohen & Cohen, 1975); regression lines were used to compare participants who spend a high frequency of hours online associate with sexual pursuits (at or above the 75th percentile, $N = 96$) and those who spend a low frequency of sexual hours online (at or below the 25th percentile, $N = 185$). The graph represents the difference between these two groups based on the relationship between sexual compulsivity and sexual sensation seeking (Figure 9).

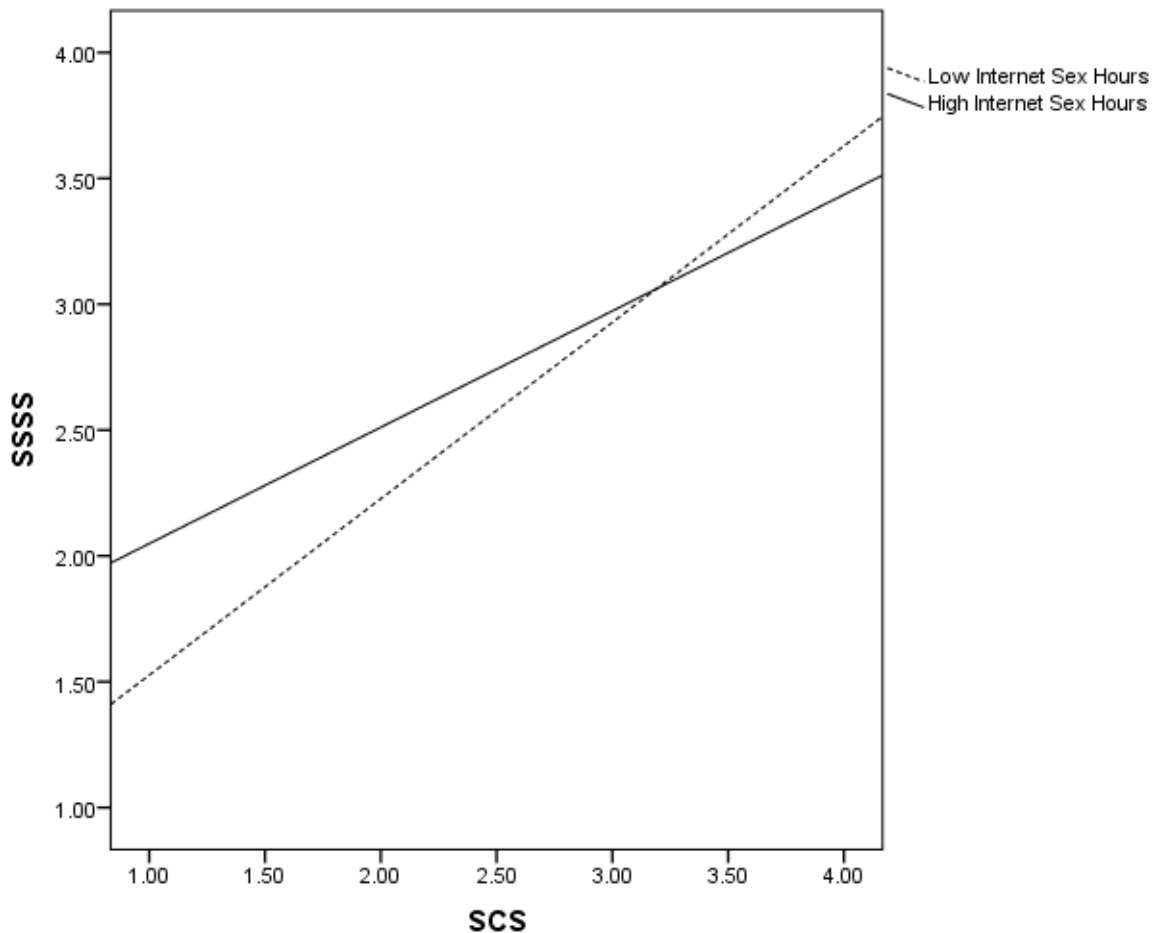


Figure 9: The regression lines for sexual sensation seekers and sexual compulsivity comparing high and low frequency of hours spent on online sexual pursuits.

The regression line representing participants who had a low frequency of internet hours for sexual purposes (sex hours) was much steeper (slope = 0.70), compared to participants who spent more time on the internet for sexual purposes (slope = 0.46).

In order to determine the third variable effect that the amount of hours spent online for sexual purposes (sexual hours) has on the relationship between sexual risk behaviour and sexual sensation seeking, two separate analyses were conducted. Sexual risk behaviour was entered in the first step, sexual risk behaviour and sexual hours in the second step and the product-term between sexual risk behaviour and sexual hours was entered in the third step. The second

analysis repeated these steps, but instead of entering sexual risk behaviour in the first step, sexual hours replaced sexual risk behaviour. The results are presented in Table 17.

Table 17: Product-term regression analysis testing whether sexual hours on the internet as a third variable influences the relationship between sexual risk behaviour and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Sexual Risk Behaviour	1, 334	.16	8.19	.41**
Sexual Hours ^b	1, 334	.11	6.56	.34**

Sexual Risk Behaviour	2, 333		8.21	.39**
Sexual Hours	2, 333	.27	6.59	.31**

Sexual Risk X Sexual Hours	3, 332	.27	0.61	0.03

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Significant results indicate that sexual risk behaviour directly predicted sexual sensation seeking in the first step ($t(1, 334) = 8.19, p < .01$). Additionally, sexual hours directly predicted sexual sensation seeking ($t(1, 334) = 6.56, p < .01$). However, both sexual risk behaviour and sexual hours remained significant in the second step and as a result, no mediating or indirect effects influenced the relationship between sexual risk behaviour and sexual sensation seeking via sexual hours. The interaction between sexual risk behaviour and sexual hours was not significant ($t(3, 332) = 0.61, p = .54$), therefore there are no moderating effects accounted for by the third variable, between sexual risk and sexual sensation seeking. The third variable (sexual hours) thus has a direct effect on sexual sensation seeking and no effect on the relationship between sexual risk behaviour and sexual sensation seeking.

In order to determine the third variable effect that the amount of hours spent online for sexual purposes (sexual hours) has on the relationship between online self-disclosure and sexual

sensation seeking, two separate analyses were conducted. Online self-disclosure was entered in the first step, online self-disclosure and sexual hours in the second step and the product-term between online self-disclosure and sexual hours was entered in the third step. The second analysis repeated these steps, but instead of entering online self-disclosure in the first step, sexual hours replaced online self-disclosure. The results are presented in Table 18.

Table 18: Product-term regression analysis testing whether sexual hours on the internet as a third variable influences the relationship between online self-disclosure and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Online Self-Disclosure	1, 334	.10	6.04	.31**
Sexual Hours ^b	1, 334	.11	6.56	.34**

Online Self-Disclosure	2, 333		4.48	.24**
Sexual Hours	2, 333	.16	5.13	.27**

Online Self-Disclosure X Sexual Hours	3, 332	.17	-1.38	-0.09

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Online self-disclosure and sexual hours directly predicted sexual sensation seeking: $t(1, 334) = 6.04, p < .01$; and $t(1, 334) = 6.56, p < .01$, respectively. Both online self-disclosure and sexual hours remained significant when entered in the second step of the analyses, indicating that there are no mediating or indirect effects between online self-disclosure and sexual sensation seeking, accounted for by the third variable. Finally, the interaction effect between online self-disclosure and sexual hours was non-significant, as such; the third variable does not moderate the relationship between online self-disclosure and sexual sensation seeking. The third variable (sexual hours) thus has a direct effect on sexual sensation seeking and no effect on the relationship between online self-disclosure and sexual sensation seeking.

4.3.3 Internet Hours associated with Personal Use

In order to evaluate the third variable effect of hours spent on the internet for personal purposes and its influence on the relationship between sexual sensation seeking and each of the seven predictor variables of sexual sensation seeking, product-term regression analysis was done. Each predictor variable was entered in the first step, the predictor and personal hours was entered together in the second step, and the product-term between the predictor and personal hours were entered in the third step. Personal hours replaced the statistical predictor variable in the first step of the second analysis.

In order to determine the third variable effect that the amount of hours spent online for personal purposes (personal hours) has on the relationship between extraversion and sexual sensation seeking, two separate analyses were conducted. Extraversion was entered in the first step, extraversion and sexual hours in the second step and the product-term between extraversion and sexual hours was entered in the third step. The second analysis repeated these steps, but instead of entering extraversion in the first step, personal hours replaced extraversion. The results are presented in Table 19 below.

Table 19: Product-term regression analysis testing whether personal hours on the internet as a third variable influences the relationship between extraversion and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Extraversion	1, 334	.04	3.56	.19**
Personal Hours ^b	1, 334	.02	2.36	.13**
.....				
Extraversion	2, 333		3.72	.20**
Personal Hours	2, 333	.06	2.60	.14**
.....				
Extraversion X Personal Hours	3, 332	.06	0.28	0.02

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Extraversion directly predicts sexual sensation seeking ($t(1, 334) = 3.56, p < .01$), but no mediation occurred due to the significant result obtained between extraversion and sexual sensation seeking in the second step of the analyses. Similarly, personal hour directly predicted sexual sensation seeking ($t(1, 334) = 2.36, p < .01$) but because the third variable was not reduced to non-significance when personal hours and extraversion was entered together in the second step of the analyses; no indirect effects occurred. Furthermore, there were no moderating effects as indicated by the product-term of extraversion and personal hours ($t(1, 334) = 0.28, p = .78$). The third variable (personal hours) thus has a direct effect on sexual sensation seeking and no effect on the relationship between online extraversion and sexual sensation seeking.

In order to determine the third variable effect that the amount of hours spent online for personal purposes (personal hours) has on the relationship between agreeableness and sexual sensation seeking, two separate analyses were conducted. Agreeableness was entered in the first step, agreeableness and sexual hours in the second step and the product-term between agreeableness and sexual hours was entered in the third step. . The second analysis repeated

these steps, but instead of entering agreeableness in the first step, personal hours replaced agreeableness. The results are presented in Table 20 below.

Table 20: Product-term regression analysis using sexual sensation seeking as the dependent variable and agreeableness and personal hours as the independent variables

Predictors ^a	df	Cum. R ²	t-value	Beta
Agreeableness	1, 334	.01	-1.91	-0.10
Personal Hours ^b	1, 334	.02	2.36	0.13**
.....				
Agreeableness	2, 333		-1.69	-0.09
Personal Hours	2, 333	.03	2.18	0.12**
.....				
Agreeableness X Personal Hours	3, 332	.03	1.15	0.07

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Agreeableness did not directly predict sexual sensation seeking ($t(1, 334) = -1.91, p = 0.06$) and as a result there can be no third variable effects.

In order to determine the third variable effect that the amount of hours spent online for personal purposes (personal hours) has on the relationship between conscientiousness and sexual sensation seeking, two separate analyses were conducted. Conscientiousness was entered in the first step, conscientiousness and sexual hours in the second step and the interaction between conscientiousness and sexual hours was entered in the third step. . The second analysis repeated these steps, but instead of entering conscientiousness in the first step, personal hours replaced conscientiousness. The results are presented in Table 21 below.

Table 21: Product-term regression analysis testing whether personal hours on the internet as a third variable influences the relationship between conscientiousness and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Conscientiousness	1, 334	.04	-3.64	-.20**
Personal Hours ^b	1, 334	.02	2.36	.13**
.....				
Conscientiousness	2, 333		-3.48	-.19**
Personal Hours	2, 333	.05	2.13	-.11 **
.....				
Conscientiousness X Personal Hours	3, 332	.05	0.88	0.05

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Conscientiousness significantly predicts sexual sensation seeking ($t(1, 334) = -3.64, p < .01$) and remained significant when entered together with personal hours. Personal hours directly predicted sexual sensation seeking ($t(1, 334) = 2.36, p < .01$) and remained significant when entered together with conscientiousness. The product-term of conscientiousness and personal hours was not significant ($t(3, 332) = 0.88, p = .38$). Results indicate that there are no third variable effects for personal hours online with regards to the relationship between conscientiousness and sexual sensation seeking. The third variable (personal hours) thus has a direct effect on sexual sensation seeking and no effect on the relationship between conscientiousness and sexual sensation seeking.

In order to determine the third variable effect that the amount of hours spent online for personal purposes (personal hours) has on the relationship between neuroticism and sexual sensation seeking, two separate analyses were conducted. Neuroticism was entered in the first step, neuroticism and sexual hours in the second step and the product-term between neuroticism and sexual hours was entered in the third step. The second analysis repeated these steps, but

instead of entering neuroticism in the first step, personal hours replaced neuroticism. The results are presented in Table 22 below.

Table 22: Product-term regression analysis testing whether personal hours on the internet as a third variable influences the relationship between neuroticism and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Neuroticism	1, 334	.00	-0.76	-0.04
Personal Hours ^b	1, 334	.02	2.36	0.13**
.....				
Neuroticism	2, 333		-0.95	-0.05
Personal Hours	2, 333	.02	2.43	0.13**
.....				
Neuroticism X Personal Hours	3, 332	.03	1.77	-0.10

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Neuroticism did not directly predict sexual sensation seeking ($t(1, 334) = -0.76, p = .45$) and as a result there can be no third variable effects.

In order to determine the third variable effect that the amount of hours spent online for personal purposes (personal hours) has on the relationship between sexual compulsivity and sexual sensation seeking, two separate analyses were conducted. Sexual compulsivity was entered in the first step, sexual compulsivity and sexual hours in the second step and the product-term between sexual compulsivity and sexual hours was entered in the third step. The second analysis repeated these steps, but instead of entering sexual compulsivity in the first step, personal hours replaced sexual compulsivity. The results are presented in Table 23 below.

Table 23: Product-term regression analysis testing whether personal hours on the internet as a third variable influences the relationship between sexual compulsivity and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Sexual Compulsivity	1, 334	.31	12.25	0.56**
Personal Hours ^b	1, 334	.02	2.36	0.13**

Sexual Compulsivity	2, 333		11.97	0.55**
Personal Hours	2, 333	.31	1.07	0.05

Sexual Compulsivity X Personal Hours	3, 332	.34	-3.39	-0.18**

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Sexual compulsivity directly predicted sexual sensation seeking, $t(1, 334) = 12.25, p < .01$.

When sexual compulsivity was entered together with personal hours in the second step, it remained significant, indicating that personal hours do not have a mediating effect on the relationship between sexual compulsivity and sexual sensation seeking. Personal hours significantly predicted sexual sensation seeking ($t(1, 334) = 2.36, p < .01$) and when entered together with sexual compulsivity; personal hours was no long significant, thus personal hours indirectly influenced sexual sensation seeking through sexual compulsivity. However, the interaction effect between sexual compulsivity and personal hours was significant ($t(3, 332) = -3.39, p < .01$). This indicated that personal hours as a third variable moderated the relationship between sexual compulsivity and sexual sensation seeking

To further examine the moderating effect, participants were compared based on high and low frequencies of hours associated with personal internet use; graphs were created and regression lines were used to compare these two groups (Cohen & Cohen, 1975). Groups were formed based on participants who spent a high frequency of hours online associate with personal

internet use (at or above the 75th percentile, N = 64) and those who spend a low frequency of personal hours online (at or below the 25th percentile, N = 95). The graph represents the difference between these two groups based on the relationship between sexual compulsivity and sexual sensation seeking (Figure 10).

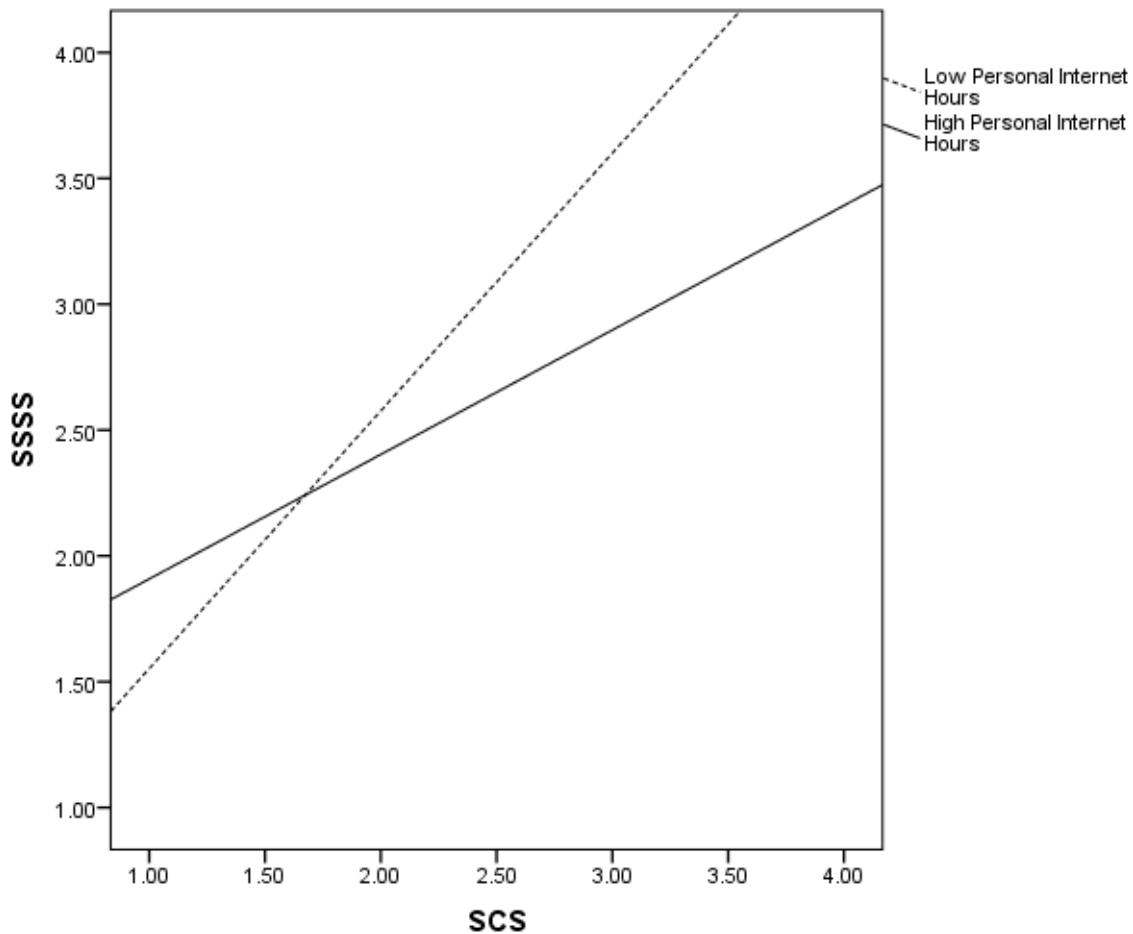


Figure 10: The regression lines for sexual sensation seeking and sexual compulsivity comparing high and low frequency hours of personal internet use.

The regression line representing participants who had a low frequency of internet hours for personal purposes (personal hours) was much steeper (slope = 1.02), compared to participants who spent more time on the internet for personal purposes (slope = 0.50).

In order to determine the third variable effect that the amount of hours spent online for personal purposes (personal hours) has on the relationship between sexual risk behaviour and sexual sensation seeking, two separate analyses were conducted. Sexual risk behaviour was entered in the first step, sexual risk behaviour and sexual hours in the second step and the interaction between sexual risk behaviour and sexual hours was entered in the third step. The second analysis repeated these steps, but instead of entering sexual risk behaviour in the first step, personal hours replaced sexual risk behaviour. The results are presented in Table 24 below.

Table 24: Product-term regression analysis testing whether personal hours on the internet as a third variable influences the relationship between sexual risk behaviour and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Sexual Risk Behaviour	1, 334	.16	8.19	0.41**
Personal Hours ^b	1, 334	.02	2.36	0.13**

Sexual Risk Behaviour	2, 333		8.03	0.40**
Personal Hours	2, 333	.17	1.88	0.09

Sexual Risk Behaviour X Personal Hours	3, 332	.18	1.55	0.08

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

Sexual risk behaviour ($t(1, 334) = 8.19, p < .01$) and personal hours ($t(1, 334) = 2.36, p < .01$) has a direct effect on sexual sensation seeking. The product-term indicated that the third variable does not moderate the relationship between sexual risk behaviour and sexual sensation seeking, $t(3, 332) = 1.55, p = .12$. When sexual risk behaviour and personal hours were entered together in the second step, sexual risk behaviour remained significant while personal hours was reduced to non-significance ($t(1, 333) = 1.88, p = .06$); indicating an indirect effect. As a result, personal hours indirectly influenced sexual sensation seeking through sexual compulsivity.

In order to determine the third variable effect that the amount of hours spent online for personal purposes (personal hours) has on the relationship between online self-disclosure and sexual sensation seeking, two separate analyses were conducted. Online self-disclosure was entered in the first step, online self-disclosure and sexual hours in the second step and the interaction between online self-disclosure and sexual hours was entered in the third step. The second analysis repeated these steps, but instead of entering online self-disclosure in the first step, personal hours replaced online self-disclosure. The results are shown in Table 25.

Table 25: Product-term regression analysis testing whether personal hours on the internet as a third variable influences the relationship between online self-disclosure and sexual sensation seeking.

Predictors ^a	df	Cum. R ²	t-value	Beta
Online Self-Disclosure	1, 334	.10	6.04	0.31**
Personal Hours ^b	1, 334	.02	2.36	0.13**
.....				
Online Self-Disclosure	2, 333		5.81	0.30**
Personal Hours	2, 333	.11	1.78	0.09
.....				
Online Self-Disclosure X Personal Hours	3, 332	.11	0.42	0.03

^a a dashed line represents different steps in the regression analysis

^b alternative first step in a separate regression analysis

** $p < 0.01$

The final product-term regression analysis indicated that both online self-disclosure and personal internet hours significantly predicted sexual sensation seeking: $t(1, 334) = 6.04, p < .01$; and $t(1, 334) = 2.36, p < .01$, respectively. When entered together in the second step, online self-disclosure remained significant while personal hours was reduced to non-significance ($t(1, 334) = 1.78, p = .08$). This indicated that there were no mediation but there was an indirect effect of personal hours on the relationship between online self-disclosure and sexual sensation seeking. The product-term indicated that the third variable does not moderate the relationship between

online self-disclosure and sexual sensation seeking, $t(3, 332) = 0.42, p = .68$. As a result, personal hours indirectly influenced sexual sensation seeking through online self-disclosure.

4.4 Summary

Based on an extensive review of the literature, twelve possible predictors of sexual sensation seeking were identified. These predictors were extraversion, agreeableness, conscientiousness, neuroticism, openness, sexual compulsivity, sexual risk behaviour, online self-disclosure, online deception, and sexual orientation (past, present, and ideal scales associated with Klein's sexual orientation grid sexual orientation). Using the enter method of multiple regression analysis; all twelve scales were entered simultaneously in the regression model as independent variables. Sexual sensation seeking was entered in the regression model as the dependent variable. Results indicated that seven of these predictor variables significantly predicted sexual sensation seeking, namely: extraversion, agreeableness, conscientiousness, neuroticism, sexual compulsivity, sexual risk behaviour, and online self-disclosure.

Thereafter, twenty-one separate product-term regression analyses were conducted in order to evaluate the effect that the three third variables (work hours: hours spent on the internet for work purpose; sexual hours: hours spent on the internet associated with online sexual pursuits; and personal hours: hours spent on the internet for personal purposes) has on the relationship between sexual sensation seeking and its statistical predictors. Results are summarized in Table 26 below.

Table 26: Summary of third variable effects on the relationship between the statistically significant predictors of sexual sensation seeking and sexual sensation seeking.

Independent Variables	Work Hours	Sexual Hours	Personal Hours
Extraversion	Moderation	Direct effect	Direct Effect
Agreeableness	No effect	No effect	No effect
Conscientiousness	Direct effect	Direct effect	Direct Effect
Neuroticism	No effect	No effect	No effect
Sexual Compulsivity	Indirect effect	Moderation	Moderation
Sexual Risk Behaviour	Direct Effect	Direct Effect	Indirect effect
Online Self-Disclosure	Moderation	No effect	Indirect effect

CHAPTER 5

DISCUSSION

For some individuals, behaviour during face-to-face interaction differs substantially from behaviour expressed in a cyber-environment. Online communication and behaviours which are characterised by a freer and unreserved expression of the self, compared to face-to-face interactions, is known as the online disinhibition effect (Suler, 2004). Anonymity offered by the internet plays a role in establishing the online disinhibition effect. Furthermore, online communication and online anonymity has been associated with sexual expression and online sexual pursuits (Cooper *et al.*, 1999b; Stern & Handel, 2001). These online sexual pursuits may be a result of sexual sensation seeking. As such, individuals who actively seek out immediate stimulation in online and offline environments may pose a sexual health risk in terms of sexually transmitted diseases and infections (Amichai-Hamburger, 2002; Cooper, 2002; Cooper, Delmonico, & Burg, 2002; Cooper & Griffin-Shelley, 2002; Stern & Handel, 2001).

The connection between sexual sensation seeking and behaviour associated with HIV-risk has been extensively documented (Kalichman *et al.*, 1994; Kalichman & Rompa, 1995). However, not many researchers have explored the role that predictors of sexual sensation seeking play in a cyber-environment. I therefore attempted to address three objectives. The first was to identify predictors of sexual sensation seeking related to offline, real-world contexts, based on the extensive body of literature reviewed. Secondly, the identified predictors were analysed for statistical significance using multiple regression analysis. Thirdly, in order to examine online sexual sensation seeking, I evaluated the role that the amount of time spent on the internet, as a

third variable, has on the relationship between sexual sensation seeking and its statistical predictors.

5.1 Statistical Predictors of Sexual Sensation Seeking

Based on the literature reviewed, twelve predictors of sexual sensation seeking were identified, namely; extraversion, agreeableness, conscientiousness, neuroticism, openness to experience, sexual compulsivity, online self-disclosure, sexual behaviour associated with HIV-risk (sexual risk behaviour), sexual orientation (past, present, and ideal), and online deception. Seven of the twelve predictor variables were statistically significant in predicting sexual sensation seeking. Extraversion, sexually compulsivity, sexual risk behaviour and online self-disclosure, were identified as positive and significant predictors of sexual sensation seeking. Agreeableness, conscientiousness, and neuroticism were identified as negative and significant predictors of sexual sensation seeking.

Individuals who score high on the extraversion scale tend to be sociable, active, outgoing, adventurous, and seek stimulation and excitement (John & Srivastava, 1999; McCrae & John, 1992). The findings indicated that the more extraverted one is, the more likely one actively seeks out sexual sensation. This is in line with researchers who have reported that individuals scoring high on measures of extraversion are more likely to engage in sexual risk behaviour (Gute & Eshbaugh, 2008; Schmitt, 2004). Significant correlations between sensation seeking and extraversion, conscientiousness, and agreeableness are consistent with regards to the literature (McCrae & John, cite in Zuckerman, 1994). In this study, both low conscientiousness and low agreeableness predicted sexual sensation seeking, and according to the literature, these two

personality traits have been associated with sexual risk behaviour (Miller *et al.*, 2004; Trobst, 2002). Low agreeableness is characterized by rebelliousness and non-compliance, and low conscientiousness is related to a lack of thinking before acting, unreliability, as well as carelessness (John & Srivastava, 1999; McCrae & John, 1992). Zuckerman argues that conscientiousness and agreeableness are directly linked to impulsivity (Zuckerman, 1993). Based on this, individuals who score low on the conscientiousness scale may be prone to sexual sensation seeking tendencies due to impulsivity, and lack of thinking things through thoroughly before acting (Zuckerman, 1993). Similarly, individuals who score low on the agreeableness scale has been reported to engage in sexual sensation seeking behaviour (McCrae & Costa, as cited in Zuckerman, 1994) as a result of their rebellious nature and disregard for social norms in terms of promiscuity and sexual behaviour (John & Srivastava, 1999; McCrae & John, 1992).

In this study, neuroticism negatively predicted sexual sensation seeking which is a departure from the literature (McCrae & John, cite in Zuckerman, 1994). Individuals who receive high scores on the neuroticism scale have been associated with liberal sexual attitudes and sexual risk behaviour (Fernandez & Castro, 2003; Gute & Eshbaugh, 2008). Trobst (2002) suggests that neurotic individuals give in to their desires more often than those who score low in neuroticism. However, results from this study indicate that the negative association between neuroticism and sexual sensation seeking may be due to the personality traits' link with the tendency of avoidance, self-esteem and impulsivity control. Highly neurotic individuals tend to avoid social encounters due to low self-esteem and the trait's connection with emotional distress such as depression, anger, guilt, and hostility (Eysenck & Eysenck, 1985; John & Srivastava, 1999; McCrae & John, 1992). As a result, those scoring high on the neurotic scale may avoid social

encounters associated with sexual sensation seeking due to the expectation of potentially interacting with others, thus resulting in low sexual sensation seeking scores.

The results indicated that sexual compulsivity was a positive and significant predictor of sexual sensation seeking, which is in line with the literature (Kalichman *et al.*, 1994; Kalichman & Rompa, 1995; Parsons *et al.*, 2001). Sexual compulsivity is characterised by a preoccupation with sexual attitudes and behaviours, therefore it can be expected that individuals scoring high on this measure are inclined to engage in sexual sensation seeking behaviour. With regard to the literature, sexual risk behaviour has been found to be positively associated with, and a significant predictor of sexual sensation seeking (Bancroft *et al.*, 2003; Chandra *et al.*, 2003; Hendershot *et al.*, 2007; Hoyle *et al.*, 2002; Kalichman *et al.*, 1994; Kalichman *et al.*, 2003; Kalichman & Rompa, 1995; Mashongaone *et al.*, 2002; Voisin *et al.*, 2013; Zuckerman, 1979). Results yielded from this study are in line with the literature, thus an increase in sexual risk behaviours may lead to an increase in sexual sensation seeking.

The sexual risk behaviour scales used in this study consisted primarily of items pertaining to sexual behaviours and not attitudes. These items revolved around behaviours such as sex under the influence of alcohol or narcotics and having contracted a sexually transmitted infection or disease. A secondary function of sensation seeking involves the optimal level of stimulation and arousal theory, which claims that sensation seeking consists of an individual's desire to increase their level of stimulation by engaging in novel activities, and by doing this they increase their level of arousal (Zuckerman, 1994). If not stimulated, the individual experiences affective emotions of displeasure and vice versa; if the individual is aroused, the individual experiences pleasurable emotions. Thus, one could hypothesize that as one engage in sexual risk behaviours,

one's sexual sensation seeking attitudes and behaviours also increases. In other words, an increase in situational sexual risk behaviour increases the desire to achieve stimulation and arousal, thus increasing sexual sensation seeking attitudes and behaviours.

The literature highlighted the tendency of individuals to self-disclose online (Amichai-Humburger *et al.*, 2002; Bonebrake, 2002; Chiou & Wan, 2006; McKenna & Bargh, 1999). These individuals express themselves in a freer, more uninhibited manner in cyber-environments, compared to face-to-face encounters, which could be explained as a result of the online disinhibition effect. In this study, online self-disclosure was measured using the Real-Me Questionnaire (Amichai-Humburger *et al.*, 2002). Results indicate that online self-disclosure was a positive predictor of sexual sensation seeking. The anonymity offered by the internet allows individuals to express themselves in an uninhibited manner, which may not be acceptable during face-to-face encounters (Suler, 2005). This uninhibited manner may be expressed in terms of individuals who use the internet to explore potentially hidden dimensions of their personality, such as sexuality (see McKenna *et al.*, 2002). When online communication takes place under conditions of anonymity, an increase in online sexual activities is observed (Cooper *et al.*, 1999b). These online activities may pertain to cybersex or sexual exploration (Ross *et al.*, 2005).

Openness, sexual orientation and online deception failed to predict sexual sensation seeking. As a result, the relationship between sexual sensation seeking and its seven statistical predictors were further analysed in order to evaluate the role that the third variable effect of time spent on the internet has on this relationship. Participants were asked to respond on three distinct categories relating to time spent on the internet: hours spent on the internet for work purposes; hours spent on the internet associated with online sexual pursuits; and hours spent on the internet

for personal purposes. Product-term regression analysis was used in order to evaluate the effect that each time category (work hours, sexual hours, and personal hours) had on the relationship between sexual sensation seeking and the statistical predictors thereof.

It is worth noting that in order to identify the statistically significant predictor variables of sexual sensation seeking, I used multiple regression analysis, using the enter method. This allowed me to analyse all twelve predictor variables simultaneously for statistical significance. As previously mentioned, seven predictor variables were identified as significant predictors of sexual sensation seeking. However, when product-term regression analysis was conducted, two of these variables failed to directly predict sexual sensation seeking on a statistical level ($p < .05$), namely: agreeableness (Table 6) and neuroticism (Table 8). As such, agreeableness and neuroticism reported to have no effect based on the results obtained from the first step in the product-term regression analysis process. The multiple regression analysis may have been affected by multicollinearity due to the use of Klein's sexual orientation grid. In this study, Klein's sexual orientation grid was divided into three categories, and as such, the same seven scale items were repeatedly used for each category: past, present, and ideal. The multicollinearity may have been caused as a result of categorizing Klein's sexual orientation grid into three scales, which essentially measures the same conceptual variable, i.e. sexual orientation. It is advised that future researchers either calculate the average of these three scales or use a single category to measure sexual orientation.

5.2 *Third Variable Effect of Hours spent online for Work purposes*

Work hours as a third variable moderated the relationship between extraversion and sexual sensation. This means that, within the sample, an increase in extraversion is significantly associated with an increase in sexual sensation seeking only for individuals who reported a high frequency of hours spent online for work purposes. The relationship between extraversion and sexual sensation seeking weakens for those who spent less time online for work purposes. This is interesting because it seems to indicate that an individual who is sociable, adventurous and spends a large number of hours or increases their amount of work hours online, possess more sexual sensation seeking attitudes and engage more in sexual sensation seeking behaviours, compared to individuals who spent less time online for work purposes, within this study. Although this study does not attempt to explore its findings within the paradigm of workplace environments or professional behaviour, due to the third variable's overt association with internet hours spent specifically online for work purposes, brief commentary is needed.

As social and energetic individuals, extraverts are believed to seek stimulation and excitement (John & Srivastava, 1999; McCrae & John, 1992). Work environments which are characterized as mundane and repetitive, could be perceived by extroverts as dull and associated with a lack of stimulation. Generally, a work day is occupied by eight hour shifts, which are mandatory which could result in feelings of irritability, frustration and anger. As a result, extroverts may use the internet as an escape mechanism, in order to achieve stimulation by engaging in online communication, under the guise of anonymity, through the use of the fictional-online self (see McKenna *et al.* 2002). However, it is possible that the hours spent on the internet for work purposes act as proxy for working long hours. Extroverted individuals may

experience these long working hours as frustrating, which could result in an increase with regards to their desire to engage in sexual sensation seeking behaviour in an offline real-world environment, as an escape from the monotony associated with the workplace. Further research is needed to explore the effect that work hours as a third variable has on the relationship between sexual sensation seeking and extraversion.

Hours spent on the internet for work purpose (work hours) was the only third variable, compared to hours spent on the internet associated with online sexual pursuits (sex hours) and hours spent on the internet for personal purposes (personal hours), to influence the relationship between sexual sensation seeking and extraversion. Compared to sexual hours and personal hours, hours spent on the internet for work purpose is the only third variable, within this study, that possibly could be overtly associated with occupation and the obligation to spend time online for work purposes. This may reinforce the notion that extroverts use the internet, in order to engage in online sexual sensation seeking behaviour, as an escape from mundane workplace environments associated with working long hours. Alternatively, it may provide support with regards to the hypothesis that individuals who are extroverted are influenced by the amount of hours spent within a mundane workplace environment, which interacts with one's extroversion personality trait, resulting in an increased desire to engage in sexual sensation seeking behaviour. As such, the expectation and obligation associated with working long hours within a workplace environment result in frustration, experiences of irritability and a lack of excitement. This may cause extroverts to experience an increased desire or urge to engage in novel sexual activities as an escape from work related frustration and obligation, thus increasing their sexual sensation seeking behaviours and attitudes.

Work hours indirectly influenced sexual sensation seeking through sexual compulsivity. The effect of sexual compulsivity on sexual sensation seeking is indirectly influenced by the amount of hours spend online for work purposes. As such, the amount of hours spent online for work purposes influences sexual compulsivity which in turn influences sexual sensation seeking. Individuals who are sexually compulsive, experience intrusive sexual thoughts and unwanted urges which interfere with daily life (Kalichman & Rompa, 1995). As mentioned, working extended hours may be a proxy for extraneous variables which could affect the relationship between sexual sensation seeking and sexual compulsivity. It may well be that working long hours is a proxy for a type-A personality, which may influence compulsivity. The more time one spends on the internet, the more one may be influenced by the online disinhibition effect, resulting in dissociative anonymity (Suler, 2004). As such, individuals at work dissociate from the online self, associated with fiction, and the offline self, which is associated with reality (McKenna *et al.*, 2002). As time online increases during work hours, the individual may become more confident to explore the fictional-online self and escape the real-offline self, resulting in online sexual pursuits during work hours. On the other hand, being exposed to the internet during work hours may reinforce or escalate problems for individuals with a history of sexual or mental health issues (Cooper *et al.*, 1999a). Individuals with a history of sexual compulsivity may be influenced by the time spent online during extended work hours, thus increasing their sexual compulsive thoughts and attitudes and in turn, seek to express these urges, thereby increasing sexual sensation seeking behaviour. The study highlights the possibility that the frequency of hours spent on the internet for work purposes influences sexual compulsivity, which influences sexual sensation seeking behaviours and attitudes.

Hours spent on the internet for work purpose was the only third variable (work hours), compared to hours spent on the internet associated with online sexual pursuits (sexual hours) and hours spent on the internet for personal purposes (personal hours), to indirectly influence the relationship between sexual sensation seeking and sexual compulsivity. Specifically, work hours indirectly influenced sexual sensation seeking through sexual compulsivity, whereas both sexual hours and personal hours moderated the relationship between sexual compulsivity and sexual sensation seeking. Online sexual pursuits (sexual hours) and personal internet use (personal hours) occur at one's leisure, during one's free time. This may be the reason why sexual hours and personal hours interact with one's potentially hidden sexual compulsive personality traits, thus moderating the relationship between sexual compulsivity and sexual sensation seeking. In opposition, work hours are associated with obligation and job performance. While working extended hours and being restricted to a workplace environment in which social etiquette and ethical decorum dictates one's behaviour; the internet may be used as an escape from the rigid conventions which dictates such environments. On the other hand, hours spent on the internet for work purpose may be a proxy for working long hours which may result in frustration causing an increase in sexual compulsive thoughts and attitudes, thereby increasing the desire to engage in sexual sensation seeking behaviour. Whether influenced by extraneous variables such as a history of sexual or mental health problems, type-A personality, or dissociative anonymity: the results of this study highlights the role that hours spent online for work purposes, and by proxy working long hours, indirectly influenced sexual sensation seeking through sexual compulsivity.

Work hours as a third variable moderated the relationship between online self-disclosure and sexual sensation seeking. As a result of the moderating effect, when online self-disclosure increases, sexual sensation seeking does too. This observation was only indicative of participants

who reported a high frequency of hours spent online for work purposes. However, if one limits one's time spent online for work purposes, the results indicate that the relationship between online self-disclosure and sexual sensation seeking actually weakens. This relationship may be influenced by the online disinhibition effect (Suler, 2004). Once again, dissociative anonymity may cause individuals to differentiate between the fictional-online self and the real-offline self, during extended work hours (McKenna *et al.*, 2002). As such, individuals escape the real-offline self by engaging in online self-disclosure, which has been associated with sexual expression and online sexual pursuits (Cooper *et al.*, 1999a; Cooper *et al.*, 1999b; Stern & Handel, 2001). The results of the study indicated that this may be true only for participants who spent a higher frequency of work hours online. For participants who spend less time online for work purposes, the relationship between online self-disclosure and sexual sensation seeking actually weakens.

The relationship between sexual sensation seeking and individuals who score high on extraversion, sexual compulsivity, and online self-disclosure are influenced by the third variable effect of time spent online for work purposes. Specifically with regards to online self-disclosure, the salient nature of online anonymity offered by the internet and the role it plays in establishing the online disinhibition effect may be likely to cause individuals to dissociate and compartmentalize between the fictional-online self and the real-offline self (Suler, 2004).

Work hours spent online as a third variable has not yielded any mediating effects, nor were there any significant moderation or indirect effects found for agreeableness, conscientiousness, neuroticism, or sexual risk behaviour. Finally, research is needed to explore the effect that work hours as a third variable has on the relationship between sexual sensation seeking and extraversion, sexual compulsivity, and online self-disclosure especially in the context of work

environments. Additionally, other variables may be of importance to investigate, such as spyware activated on the office network, open-plan or private office space, and so on.

5.3 *Third Variable Effect of Hours spent online for Sexual pursuits*

Sexual hours as a third variable moderated the relationship between sexual compulsivity and sexual sensation seeking. Individuals who spent more time online explicitly for sexual pursuits may use the internet as a cathartic release to achieve sexual gratification, as a result of the internet's online disinhibition effect (Hertlein & Sendak, 2007; Suler, 2004). These individuals thus embrace the salient nature of online anonymity offered by the internet in order to engage in activities that result in sexual stimulation which may extend to offline, face-to-face encounters, such as casual sex (McFarlane *et al.*, 2000; Padgett, 2007; Parsons *et al.*, 2001).

The results yielded from this study seem to indicate that the relationship between sexual compulsivity and sexual sensation seeking increased at a greater rate for participants who spent less time online for sexual pursuits, compared to participants who spent more time online for sexual pursuits. This indicated that individuals who are sexually compulsive do not specifically use the internet to engage in online sexual pursuits and sexual sensation seeking behaviour. Instead, these individuals prefer engaging in sexual sensation seeking behaviours in an offline, real world context. As mentioned, individuals who are sexually compulsive are characterized as being sexually preoccupied and having a lack of sexual control, as a result, they tend to score high on the sexual sensation seeking scale (Parsons *et al.*, 2001) and may tend to have a higher number of sex partners and a greater likelihood of engaging in casual sex (Dodge *et al.*, 2004; Kalichman & Cain, 2004; Satinsky *et al.*, 2008).

Sexually compulsivity was the only statistical predictor of sexual sensation seeking to be influenced by hours spent on the internet associated with online sexual pursuits, thus affecting the relationship between sexual sensation seeking and sexual compulsivity. Compared to hours spent on the internet for work purposes and hours spent on the internet for personal purposes; hours spent on the internet associated with online sexual pursuits is the only third variable, within this study, that is overtly related to online sexual attitudes and behaviours. Furthermore, the sexually compulsivity scale also overtly includes items related to sexual behaviours and attitudes. As a result, the third variable (sexual hours) may have influenced the sexual compulsivity scale, which has the ability to measure latent sexually compulsive personality traits (Kalichman *et al.*, 1994).

Sexual hours spent online as a third variable has not yielded any mediating effects, nor were there any significant moderation or indirect effects found for extraversion, agreeableness, conscientiousness, neuroticism, online self-disclosure, or sexual risk behaviour.

5.4 Third Variable Effect of Hours spent online for Personal purposes

Personal hours as a third variable moderated the relationship between sexual compulsivity and sexual sensation seeking. The moderating effect indicated that for participants, within this study, who spent less time on the internet for personal purposes, the relationship between sexual compulsivity and sexual sensation seeking increased at a much greater rate than for those who spent more hours online for personal purposes. To some extent, these results indicate that individuals who are sexually compulsive do not associate personal internet use with online sexual sensation seeking behaviour. Instead, these individuals tend to engage in personal internet

use which primarily pertains to searching for information, social networking, chatting to others, downloading and so on. As such, individuals who are sexually compulsive may prefer to engage in offline, real world, sexual sensation seeking behaviour which has been associated with multiple sex partners and casual sex (Dodge *et al.*, 2004; Kalichman & Cain, 2004; Parsons *et al.*, 2001; Satinsky *et al.*, 2008).

The effect that the personal hours have on sexual sensation seeking is indirect through sexual risk behaviour. As such, the amount of hours spent online for personal purposes influences sexual risk behaviour which in turn positively influences sexual sensation seeking. The study therefore highlights the possibility that frequency of hours spent on the internet for personal purposes results in sexual sensation seeking due to an individual's sexual risk behaviour. Again, this association could have been influenced by the sexual risk behaviour scale's items which explicitly relates to sexual health-risk behaviours, such as engaging in unprotected sex while under the influence of substances. Therefore, when one's personal internet hours increase, the online disinhibition effect influences one to engage in sexual risk behaviour due to dissociative anonymity (Suler, 2004), increasing online sexual sensation seeking behaviour which progresses to offline sexual risk behaviour.

Hours spent on the internet for personal purposes was the only third variable, compared to hours spent on the internet for work purpose and hours spent on the internet associated with online sexual pursuits, to indirectly affect the relationship between sexual risk behaviour and sexual sensation seeking. This may be because sexual hours are explicitly associated with an individual's choice to use the internet for sexual online pursuits. During official work hours, one is engaged in internet behaviour which pertains to job performance and professionalism. On the

other hand, during hours spent on the internet for personal purposes one engages in activities such as chatting, downloading, social networking, and information browsing or researching which does not pertain to sexuality. However, the results indicate that spending personal hours online influences sexual sensation seeking through sexual risk behaviour. As a result, engaging in online personal activities act as a gateway to realizing that the internet and its many online platforms may be used for sexual pursuits, thus increasing the desire to engage in sexual sensation seeking behaviours (Cooper *et al.*, 1999a; Cooper *et al.*, 1999b).

Personal hours spent on the internet indirectly influenced the relationship between online self-disclosure and sexual sensation seeking. Individuals who tend to self-disclose more intensely and uninhibitedly via the internet exhibit sexual sensation seeking behaviours and attitudes as a result of the personal hours spent online, compared to those who spent less personal hours online. Cyber-environments, whether online for personal or work related reasons, encourages individuals to self-disclose more often, compared to real-world situations when influenced by the online disinhibition effect (Bonebrake, 2002; McKenna & Bargh, 1999; Suler, 2004). Dissociative anonymity influences the online disinhibition effect (Suler, 2004), which may result in an increase of online communication characterized by sexual expression and online sexual pursuits (Stern & Handel, 2001), as well as disclosing sexual information (Chiou, 2006). Hours spent on the internet for personal purposes may result in self-disclose online to a greater extent, which in turn results in an increased desire to engage in online and offline sexual sensation seeking behaviour.

Personal hours spent online as a third variable has not yielded any other mediating effects, nor were there any significant moderation or indirect effects found for extraversion, agreeableness, conscientiousness, or neuroticism.

5.5 Conclusion

The exponential growth of the internet has influenced every aspect of daily life, including interpersonal relationships (Balkan & Adalier, 2011), occupation (Wallace, 2004), education (Anderson *et al.*, 2012), recreation (Whitty & McLaughlin, 2007), and communication (Bellanca & Stirling, 2011). Accompanying the growth of the internet is the desire to explore and know more about sexuality, and as such, topics revolving around sexuality are regarded as the most searched for online (Ross *et al.*, 2005). As such, the link between the internet and sexuality has given rise to what is known as the next sexual revolution (Cooper & Griffin-Shelley, 2002).

To a large degree, online interaction is said to be influenced by one's personality (Amichai-Hamburger, 2002). This study contributed to the extensive body of sexual sensation seeking literature by identifying twelve possible predictors of sexual sensation seeking and statistically examining these predictors for statistical significance. Extraversion, agreeableness, neuroticism, conscientiousness, sexual compulsivity, sexual risk behaviour, and online self-disclosure statistically predicted sexual sensation seeking. In addition to this, I explored the relationship between sexual sensation seeking and its statistical predictors by evaluating the third variable influence that the amount of hours spent online has on this relationship. Furthermore, I distinguished between three third variable categories; hours spent on the internet for work purpose (work hours), hours spent on the internet associated with online sexual pursuits (sexual

hours), and hours spent on the internet for personal purposes. With regards to the third variable effect, I have shown that, within this sample, work hours moderated the relationship between extraversion and sexual sensation seeking; work hours indirectly influenced sexual sensation seeking through sexual compulsivity; and work hours moderated the relationship between self-disclosure and sexual sensation seeking. Furthermore, sexual hours moderated the relationship between sexual compulsivity and sexual sensation seeking. Finally, I have shown that, within this sample, personal hours moderated the relationship between sexual compulsivity and sexual sensation seeking; personal hours indirectly influenced sexual sensation seeking through sexual risk behaviour; and personal hours indirectly influenced sexual sensation seeking through online self-disclosure.

The result from this study indicates that time spent online influences one's personality traits, which supports the literature (Ebeling-Witte, Frank, & Lester, 2007; Mottram, GradDipPsych, & Flemming, 2009). Changes in personality, online self-disclosure, an increase in time spent online, and a disregard of one's responsibilities may be indicative of problematic internet use associated with sexual risk behaviour, sensation seeking and sexual compulsivity (Amichaie-Humburger, 2002; Bonebrake, 2002; Capri & Gorski, 2007; Chiou & Wan, 2006; Cooper & Griffin-Shelley, 2002; Dew & Chaney, 2005; McFarlane *et al.*, 2002; McKenna & Bargh, 1999; Parsons *et al.*, 2002; Perry *et al.*, 2007; Stern & Handle, 2001). Due to the intrusive sexual thoughts and urges experienced by individuals who are sexually compulsive; and the curiosity and preference for excitement experienced by extroverts (John & Srivastava, 1999; McCrae & John, 1992): the internet may be used as an escape mechanism to engage in online sexual sensation seeking behaviour, especially during official work hours. This escape from the workplace may be in the form of communicating with others online, such as online self-

disclosure (Bonebrake, 2002). Furthermore, the frustration experienced by extroverts and individuals who are sexually compulsive, and the obligation and responsibility associated with working long hours may result in an increase in one's desire to engage in sexual sensation seeking and sexual risk behaviour in a real world, offline environment, as an escape from these work frustrations and obligations. Regardless whether online work hours is a proxy for spending long hours in a workplace environment, it is advised that internet use policies be put in place to establish and maintain a professional culture within the workplace, and to ensure that job performance is consistently met. Employers may want to monitor employees' internet and intranet access with the use of internet software packages to identify and report unauthorized online activity, and monitor hours spent online in order to identify individuals who may require treatment with regards to problematic internet use, sexual compulsivity, and inappropriate sexual behaviour in the workplace.

The results of this study may be of interest to sex therapists and counsellors working with individuals who are compelled to use the internet due to hypersexuality, such as sexual compulsivity. Finally, corporations, university officials, and youth and sexual health organisations may want to create awareness and provide educational resources with regards to the role that the internet plays as a medium to explore sexuality. These sexual explorations may pertain to online sexual activities such as cybersex, or offline activities such as searching for sex partners. Awareness campaigns should highlight the potential health risk and life changing consequences pertaining to the internet and sexuality, which may include engaging in unprotected sex, greater likelihood of multiple sex partners, sex under the influence of alcohol and narcotics, HIV-risk and contracting other sexually transmitted diseases and infections, and unwanted pregnancy.

5.6 *Limitations and Recommendations for Further Research*

There were several limitations in the study. Firstly, the study employed a cross-sectional survey design and as a result, the relationships between variables may not be regarded as causal. All measures were self-reported therefore response bias may have influenced the results. Additionally, participants relied on memory to recall the amount of time they had spent on the internet based on three time related categories. Future studies should employ longitudinal designs which make use of internet applications to record the participant's amount of online hours over a time period, thus ensuring accurate time related data.

Attention should be given to the sexual risk behaviour scale used in this study. The measure was computed using three items which were common factors associated with HIV-risk. Although the reliability was somewhat questionable to acceptable, the measure could possibly have affected associations with the sexual sensation seeking scale. Finally, the study made use of convenient sampling methods and as such, although recruitment took place across various platforms to ensure diversity, the sample is not representative of the South African population. Caution should be taking when interpreting and generalizing the results. Future research should identify valid and reliable sexual risk behaviour scales in order to evaluate its association with sexual sensation seeking, and whether or not time on the internet influences this relationship. Despite these limitations, the study and its findings provide valuable information; contributing to the limited body of literature which discusses the internet's role with regards to sexual sensation seeking, as well as highlighting the influence that the internet has on one's personality.

APPENDICES

Appendix A

E-mail/advertisement to recruit potential participants via NGO, Student Organisations, Social Groups and Online Social Networks

To Whom It May Concern

This letter serves to kindly request your participation in academic research by completing an online questionnaire.

As a student at Stellenbosch University, registered in the Master of Art and Social Sciences Degree in Psychology, I am currently conducting academic research in order to complete a degree. Through the use of an online questionnaire, I aim to explore topics of sexuality, personality and the use of the internet. Please note that the aforementioned research has been approved by the Research Ethics Committee of Stellenbosch University (Protocol Number: HS676/2011). For further information with regards to ethical approval, please contact Mr. Sidney Engelbrecht, the REC Coordinator, at 021 808 9183.

If you are 18 years of age and older, and would like to participate in the above mentioned research, please click on the link below. To complete the online questionnaire, please set aside 25-35 minutes of your time.

The online questionnaire contains content which may refer to your personal and sexual behaviour. If you are likely to be offended by topics of sexuality, please refrain from participating in the research. Participation is voluntary, confidential and anonymous. Furthermore, participation poses little risk, and participants are allowed to withdraw their association from the research by simply not completing the online questionnaire. In the unlikely event that participation results in any form of discomfort, the researcher has identified a list of organisations that may be consulted.

To access the online questionnaire, please click on the link below:

<https://surveys.sun.ac.za/Survey.aspx?s=934941730153438cb5950ceb3581235f>

Sincerely,

.....
NEIL RYAN HASSAN
PRIMARY RESEARCHER

In the unlikely event that your participation, in the above mention research, results in any form of discomfort, please contact the following organisations:

FAMSA

Famsa supports families through stressful situations; offering counselling and education to strengthen marriage and other relationships in the family. Famsa also assists with divorce, mediation, domestic violence, trauma, grief counselling, and much more.

The National Director: Mrs D C Mothiba
15 Pascoe Avenue
Kempton Park
Gauteng
1619

Tel No.: (011) 975 7106/7

Fax : (011) 975 7108

E-Mail: national@famsa.org.za

For regional centres and contact details, please consult the FAMSA Website: www.famsa.org.za

TRIANGLE PROJECT

Offers various social support services as well as personal and group counselling to Lesbian, Gay, Bisexual, Transgender and Intersex (LGBTI) people.

Unit 29,
Waverley Business Park
Winchester St
Mowbray
7700

Gay and Lesbian Helpline: +27 (0) 21 712 6699

Tel.: +27 (0) 21 448 3812

Fax: +27 (0) 21 448 4089

e-mail: info@triangle.org.za

Web: www.triangle.org.za

LIFELINE

Offers 24-hour crisis intervention services. Free, confidential telephone counselling, rape counselling, trauma counselling, Aids counselling, and a range of other services.

8th Floor
North City House
Cnr Melle & Jorrisen Street
Braamfontein
Johannesburg
2001

Tel: (+27 11) 715-2000

The National AIDS Helpline: 0800 012 322

Fax: (+27 11) 715-2001

For regional centres and contact details, please consult the LIFELINE Website: <http://www.lifeline.org.za>

ALCOHOLICS ANONYMOUS SA

Worldwide fellowship for alcoholics supporting those choosing to be sober. Only requirement for membership is a desire to stop drinking.

General Service Office

Unit 5 & 6

Alves Centre

Jubili Street, Raceview

Alberton

1450

National Hotline: 0861 435 722

For regional centres and contact details, please consult the Alcoholics Anonymous SA website:

<http://www.aasouthafrica.org.za>

NARCOTICS ANONYMOUS SA

NA is a non-profit organisation for recovering drug addicts who meet regularly to help each other stay clean.

Narcotics Anonymous South Africa Region

PO Box 46404

Orange Grove

Johannesburg

2119

National 24-hour help-line: 083 900 69 62

For regional centres and contact details, please consult the Narcotics Anonymous website: <http://www.na.org.za>

Appendix B

Consent to participate in research

The current research is being conducted by Neil Ryan Hassan, a MA Psychology student. Please note that the information provided by you will be used for thesis purposes, and could possibly be published in a research journal. You were selected as a possible participant in the current research because you are an active user of the internet and older than 18 years of age.

Please read the following terms before consenting to participate in the current research.

1. PURPOSE OF THE STUDY

Though the use of an online questionnaire, I aim to explore sexuality and the use of the internet.

2. PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

After consent has been given, you will be asked to click on a link which will redirect you to an online website. Your browser will open a webpage on which the survey is hosted. The survey takes between 25 to 35 minutes to complete.

3. POTENTIAL RISKS AND DISCOMFORTS

The study poses no physical risk to any participant.

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The study aims to contribute to the field of cyberpsychology. Results obtained may also be used to design awareness campaigns pertaining to correlations between sexual risk behaviour and internet use.

5. PAYMENT FOR PARTICIPATION

Participation in the current study is voluntary.

6. CONFIDENTIALITY AND ANONYMITY

Confidentiality will be maintained by means of anonymity, participants are not requested to provide any information which could identify the participant. Due to the anonymity of your participation, there are no means of identifying you and as a result, confidential agreements are not necessary. All information provided will be stored on the websites database. Please note that only the primary research has access to the survey information. As mentioned, the information yielded from the survey will contribute towards the researcher's thesis as well as possible publication in a research journal.

7. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to participate in this study, you may withdraw at any time without consequences of any kind. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

8. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact Neil Ryan Hassan (Primary Researcher) at 0761231140 or Mr. Kafaar (Supervisor) at 0218083447.

9. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Maryke Hunter-Hüselmann (mh3@sun.ac.za; 021 808 4623) at the Division for Research Development.

SIGNATURE OF PARTICIPATION

The information above was described to me by reading the consent agreement in English, a language which I am in full command of. I realize that I have the opportunity to ask any questions pertaining to the research and if any questions were asked, they were answered to my satisfaction.

By typing the following characters exactly as they appear, in the space provided below, I acknowledge that I am 18 years of age or older and that I hereby consent voluntarily to participate in the current research.

If you do not wish to participate in the above mentioned research, please close your web browser now.



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Appendix C

Part One: Demographic Information

Directions: Please answer all the questions/ statements carefully. Select the most reflective response with regards to your personal experiences, thoughts or feelings. Wherever appropriate, please insert your answer by typing a value into the field provided.

***1. How old are you?**

Please type your age in the field provided, numerical values only.

***2. What sex are you?**

- Male
- Female
- Transgendered
- Other (Please explain)

***3. Which racial group best describes you?**

- White/ Caucasian
- Indian
- Coloured
- Black
- Asian
- Other (Please explain)

***4. Are you a South African citizen?**

- Yes
- No

***5. What is your sexual orientation?**

- Heterosexual (attracted to the opposite sex)
- Homosexual (attracted to the same sex)
- Bisexual (attracted to men and women)
- Sexually Curious (might want to explore my sexuality)
- Other

***6.1 If you are homosexual, bisexual or sexually curious; are you open to family about being attracted to the same sex?**

Do family members know about your attraction to the same sex? (SAME SEX: men attracted to other men, or women attracted to other women)

- I am open about my same sex attraction
- I am NOT open about my same sex attraction
- I am heterosexual and have no sexual attraction to the same sex

***6.2 If you are homosexual, bisexual or sexually curious; please indicate by selecting from the list below, which family members know about your same sex attraction?**

Same Sex Attraction: men attracted to other men, or women attracted to other women.

- 1. Mother
- 2. Father
- 3. Sister
- 4. Brother
- 5. Cousin

- 6. Aunt
- 7. Uncle
- 8. Nephew
- 9. Niece
- 10. Grandmother
- 11. Grandfather
- 12. I am heterosexual and have no sexual attraction to the same sex
- 13. None of my family members know about my same sex attraction

***6.3 If you are homosexual, bisexual or sexually curious; are you open with your friends about being attracted to the same sex?**

- I am open about my same sex attraction
- I am NOT open about my same sex attraction
- I am heterosexual and have no sexual attraction to the same sex

***7. What is your relationship status?**

- Single (not dating or in a committed relationship)
- Dating (phase of courtship, not single or in a committed relationship)
- Committed Relationship (in a romantic relationship with one partner)
- Mutually Open Relationship (in a romantic relationship with more than one partner)
- Monogamous Marriage (in a married relationship with only one partner)
- Open Marriage (married but allowed to be in a romantic relationship with other partners)
- Divorced

***8. Have you ever had penetrative sexual intercourse (sexual activity with oral, anal or vaginal penetration)?**

- Yes No

***9. Have you ever had non-penetrative sexual intercourse (sexual activity without vaginal, anal or oral penetration)?**

- Yes No

***10. Would you describe yourself as someone who takes risks?**

- Always
- Almost always
- Sometimes
- Rarely
- Never

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Appendix D

Part Two: Big Five Inventory

Directions: Here are a number of characteristics that may or may not apply to you. Please select the response that best reflects the extent to which you agree or disagree with that statement.

I AM SOMEONE WHO...

*1) ... **Is talkative.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*2) ... **Tends to find fault with others.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*3) ... **Does a thorough job.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*4) ... **Is depressed, blue.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*5) ... **Is original, comes up with new ideas.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*6) ... **Is reserved.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*7) ... **Is helpful and unselfish with others.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*8) ... **Can be somewhat careless**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*9) ... **Is relaxed, handles stress well.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*10) ... **Is curious about many different things.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*11) ... **Is full of energy.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*12) ... **Starts quarrels with others.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*13) ... **Is a reliable worker.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*14) ... **Can be tense.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*15) ... **Is ingenious, a deep thinker.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*16) ... **Generates a lot of enthusiasm.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*17) ... **Has a forgiving nature.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*18) ... **Tends to be disorganized.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*19) ... **Worries a lot.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*20) ... **Has an active imagination.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*21) ... **Tends to be quiet.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*22) ... **Is generally trusting.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*23) ... **Tends to be lazy.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*24) ... **Is emotionally stable, not easily upset.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*25) ... **Is inventive**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*26) ... **Has an assertive personality**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*27) ... **Can be cold and aloof.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*28) ... **Perseveres until the task is finished.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*29) ... **Can be moody.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*30) ... **Values artistic, aesthetic experiences.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*31) ... **Is sometimes shy, inhibited.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*32) ... **Is considerate and kind to almost everyone.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*33) ... **Does things efficiently.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*33) ... **Does things efficiently.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*34) ... **Remains calm in tense situations.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*35) ... **Prefers work that is routine.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*36) ... **Is outgoing, sociable.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*37) ... **Is sometimes rude to others.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*38) ... **Makes plans and follows through with them.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*39) ... **Gets nervous easily.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*40) ... **Likes to reflect, play with ideas.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*41) ... **Has few artistic interests.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*42) ... **Likes to cooperate with others.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*43) ... **Is easily distracted.**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

*44) ... **Is sophisticated in art, music, or literature**

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly

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Appendix E

Sexual Sensation Seeking Scale

Directions: Here are a number of characteristics that may or may not apply to you. Please select the response that best reflects the extent to which you agree or disagree with that statement.

*1) I like wild "uninhibited" sexual encounters.

Not at all me Somewhat like me Often like me Very much like me

*2) My sexual partners probably think I am a "risk taker."

Not at all me Somewhat like me Often like me Very much like me

*3) I enjoy the sensation of intercourse without a condom.

Not at all me Somewhat like me Often like me Very much like me

*4) I enjoy the company of "sensual" people.

Not at all me Somewhat like me Often like me Very much like me

*5) I enjoy watching "X-rated" videos.

Not at all me Somewhat like me Often like me Very much like me

*6) I am interested in trying out new sexual experiences.

Not at all me Somewhat like me Often like me Very much like me

*7) I feel like exploring my sexuality.

Not at all me Somewhat like me Often like me Very much like me

*8) I like to have new and exciting sexual experiences and sensations.

Not at all me Somewhat like me Often like me Very much like me

*9) I have said things that were not exactly true to get a person to have sex with me.

Not at all me Somewhat like me Often like me Very much like me

*10) The physical sensations are the most important thing about having sex.

Not at all me Somewhat like me Often like me Very much like me

*11) When it comes to sex, physical attraction is more important to me than how well I know the person.

Not at all me Somewhat like me Often like me Very much like me

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Appendix F

Sexual Compulsivity Scale

Directions: Here are a number of statements that may or may not apply to you. Please select the response that best reflects the extent to which you agree or disagree with that statement.

*1) My sexual appetite has gotten in the way of my relationship.

Not at all me Somewhat like me Often like me Very much like me

*2) My sexual thoughts and behaviour are causing problems in my life.

Not at all me Somewhat like me Often like me very much like me

*3) My desires to have sex have disrupted my daily life.

Not at all me Somewhat like me Often like me Very much like me

*4) I sometimes get so horny I could lose control.

Not at all me Somewhat like me Often like me Very much like me

*5) I find myself thinking about sex while at work.

Not at all me Somewhat like me Often like me Very much like me

*6) I feel that my sexual thoughts and feelings are stronger than I am.

Not at all me Somewhat like me Often like me Very much like me

*7) I have to struggle to control my sexual thoughts and behaviour.

Not at all me Somewhat like me Often like me Very much like me

*8) I think about sex more than I would like to.

Not at all me Somewhat like me Often like me Very much like me

*9) It has been difficult for me to find sex partners who desire having sex as much as i want to.

Not at all me Somewhat like me Often like me Very much like me

*10) I sometimes fail to meet my commitments and responsibilities because of my sexual behaviour.

Not at all me Somewhat like me Often like me Very much like me

Next >>

Appendix G

Questions related to Online Deception

Directions: Please answer all the questions/ statements carefully. Select the most appropriate response with regard to your personal experiences, thoughts or feelings.

1. When on the internet, I have lied about...

***a) ... my relationship status.**

- Never
- Rarely
- Sometimes
- More than not
- Always

***b) ... my sexuality. (Pretended to be heterosexual/ homosexual / bisexual when online)**

- Never
- Rarely
- Sometimes
- More than not
- Always

***c) ... my physical appearance.**

- Never
- Rarely
- Sometimes
- More than not
- Always

2. When on the internet, I am honest about...

***a) ... my age.**

- Never
- Rarely
- Sometimes
- More than not
- Always

***b) ... my occupation.**

- Never
- Rarely
- Sometimes
- More than not
- Always

3. When asked what my age was on page one, I lied and gave an inaccurate reflection of my real age.

Please Note: Choosing "TRUE" means that you did not give an accurate indication of your current age, when asked on page one. Choosing "FALSE" means that you accurately indicated your current age, when asked on page one.

- True
- False

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Appendix H

Real Me Questionnaire

Directions: Please answer all the questions/ statements carefully. Select the most appropriate response with regard to your personal experiences, thoughts or feelings.

***1. Do you think you reveal more about yourself to people you know from the Internet than to real-life (non-Net) friends?**

Yes No

***2. Are there things your internet friends know about you that you cannot share with real-life (non-Net) friends?**

Yes No

***3. Do you think you express different sides of yourself on the internet more than you would with real life (non-Net) friends?**

Not At All
 A Little
 Somewhat
 Equally
 Very Much
 A Lot
 A Great Deal

***4. Would your family or friends be surprised if they were to read your internet emails, newsgroup postings, or any social network posts (status updates)?**

Not At All
 A Little
 Somewhat
 Equally
 Very Much
 A Lot
 A Great Deal

Appendix I

Klein's Sexual Orientation Grid Modified

Directions: Please answer all the questions/ statements carefully. Select the most appropriate response with regard to your personal experiences, thoughts or feelings.

PAST

The following set of questions are related to your past; your entire life, excluding the most recent 12 months.

***1) To whom are you sexually attracted?**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***2) With whom have you actually had penetrative sex? (sexual activity with oral, anal or vaginal penetration)**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***3) With whom have you actually had non-penetrative sex? (sexual activity *without* vaginal, anal or oral penetration)**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***4) Whom are your sexual fantasies about? (They may occur during masturbation, daydreaming, as part of real life, or purely in your imagination.)**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***5) Do you love and like only members of the same sex, only members of the other sex, or members of both sexes?**

- Other sex only
- Other sex mostly

- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***6) With members of which sex do you socialize?**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***7) What is the sexual identity of the people with whom you socialize?**

- Heterosexual only
- Heterosexual mostly
- Heterosexual somewhat more
- Heterosexual/ Gay-Lesbian equally
- Gay/ Lesbian somewhat more
- Gay/ Lesbian mostly
- Gay/ Lesbian only

***8) How do you think of yourself?**

- Heterosexual only
- Heterosexual mostly
- Heterosexual somewhat more
- Heterosexual/ Gay-Lesbian equally
- Gay/ Lesbian somewhat more
- Gay/ Lesbian mostly
- Gay/ Lesbian only

PRESENT

The following set of questions are related to the present; specifically, the last 12 months of your life.

***1) To whom are you sexually attracted?**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***2) With whom have you actually had penetrative sex? (sexual activity with oral, anal or vaginal penetration)**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***3) With whom have you actually had non-penetrative sex? (sexual activity *without* vaginal, anal or oral penetration)**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***4) Whom are your sexual fantasies about? (They may occur during masturbation, daydreaming, as part of real life, or purely in your imagination.)**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***5) Do you love and like only members of the same sex, only members of the other sex, or members of both sexes?**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***6) With members of which sex do you socialize?**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***7) What is the sexual identity of the people with whom you socialize?**

- Heterosexual only
- Heterosexual mostly
- Heterosexual somewhat more
- Heterosexual/ Gay-Lesbian equally
- Gay/ Lesbian somewhat more
- Gay/ Lesbian mostly
- Gay/ Lesbian only

***8) How do you think of yourself?**

- Heterosexual only
- Heterosexual mostly
- Heterosexual somewhat more
- Heterosexual/ Gay-Lesbian equally
- Gay/ Lesbian somewhat more
- Gay/ Lesbian mostly

IDEAL

The following set of questions are related to your ideal preferences; what you think you will eventually like.

***1) To whom are you sexually attracted?**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***2) With whom have you actually had penetrative sex? (sexual activity with oral, anal or vaginal penetration)**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex somewhat more
- Same sex mostly
- Same sex only

***3) With whom have you actually had non-penetrative sex? (sexual activity *without* vaginal, anal or oral penetration)**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***4) Whom are your sexual fantasies about? (They may occur during masturbation, daydreaming, as part of real life, or purely in your imagination.)**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***5) Do you love and like only members of the same sex, only members of the other sex, or members of both sexes?**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

***6) With members of which sex do you socialize?**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally

- Same sex mostly
- Same sex only

***7) What is the sexual identity of the people with whom you socialize?**

- Heterosexual only
- Heterosexual mostly
- Heterosexual somewhat more
- Heterosexual/ Gay-Lesbian equally
- Gay/ Lesbian somewhat more
- Gay/ Lesbian mostly
- Gay/ Lesbian only

***8) How do you think of yourself?**

- Other sex only
- Other sex mostly
- Other sex somewhat more
- Both sexes equally
- Same sex somewhat more
- Same sex mostly
- Same sex only

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Appendix J

Questions related to Peer Influence and Risk Appraisal

Directions: Please answer all the questions/ statements carefully. Select the most reflective response with regard to your personal experiences, thoughts or feelings.

***1) The opinions of my friends are important to me.**

- Not at all
- Barely
- Reasonably
- Quite often
- Completely

***2) My peer group is similar to me with regards to my sexuality and sexual behaviour.**

- Not at all
- Barely
- Reasonably
- Quite often
- Completely

***3) I believe my chance of contracting a Sexually Transmitted Disease or Infection is...**

- 100% Highly unlikely
- 75% unlikely
- 50% likely
- 25% unlikely
- 0% unlikely

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Appendix K

Questions related to Sexual Risk Behaviour

Directions: Please answer all the questions/ statements carefully. Select the most reflective response with regards to your personal experiences, thoughts or feelings. Wherever appropriate, please insert your answer by typing a value into the field provided.

*1. In the past 6 months, how many same-sex sexual partners have you had?

*2. In the past 6 months, how many opposite-sex sexual partners have you had?

*3. How many same-sex sexual partners have you had in your entire life, excluding the last 6 months?

*4. How many opposite-sex sexual partners have you had in your entire life, excluding the last 6 months?

*5. In general, the duration of friendship BEFORE I have sexual intercourse with a member of the opposite sex is on average...

- Less than 7 days
- 2 to 4 weeks
- More than 1 month
- I am homosexual and do not have sexual intercourse with members of the opposite sex

*6. In general, the duration of friendship BEFORE I have sexual intercourse with a member of the same sex is on average...

- Less than 7 days
- 2 to 4 weeks
- More than 1 month
- I am heterosexual and do not have sexual intercourse with members of the same sex

*7. During the past 3 months, have you had sexual intercourse while under the influence of alcohol/narcotics?

- Yes
- No

*8. During the past 12 months, have you had sexual intercourse while under the influence of alcohol/narcotics?

- Yes
- No

*9. Did you use a condom during your first sexual penetration activity.

- Yes
- No

*10. Have you ever contracted a sexually transmitted disease/ infection, in the past?

- Yes
- No

*11. Do you currently have a Sexually Transmitted Disease or Infection?

- Yes
- No

12. Please indicate which of the following Sexually Transmitted Disease or Infections have you had or do you currently have?

***a) Syphilis**

- Yes
- No

***b) Chlamydia**

- Yes
- No

***c) Gonorrhoea**

- Yes
- No

***d) Herpes**

- Yes
- No

***e) HIV/AIDS**

- Yes
- No

***f) Hepatitis**

- Yes
- No

***f) Hepatitis**

- Yes
- No

***g) Genital Warts or HPV**

- Yes
- No

***h) Chancroid**

- Yes
- No

***i) Trichomoniasis**

- Yes
- No

***j) Pubic lice (crabs) or Scabies**

- Yes
- No

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Appendix L

Questions related to Internet Use

Directions: Please answer all the questions/ statements carefully. Select the most reflective response with regards to your personal experiences, thoughts or feelings. Wherever appropriate, please insert your answer by typing a value into the field provided.

1. How much time do you spend on the internet for work purposes per day?

***Hours:**
Please only use numerical values.

***Minutes:**
Please only use numerical values.

2. How much time do you spend on the internet for sexual purposes per day?

***Hours:**
Please only use numerical values.

***Minutes:**
Please only use numerical values.

3. How much time do you spend on the internet for personal purposes other than sexual, in an average day?

***Hours:**
Please only use numerical values.

***Minutes:**
Please only use numerical values.

***4. With regards to internet use, I spend most of my time online...**

- Chatting
- Downloading
- Social Networking
- Online Dating
- Researching (Information)
- Watching Porn

***5. I have met people in an online environment, which has resulted in a face to face encounter.**

- Never
- Rarely
- Sometimes
- More Than Not
- Always

***6. I have met people in an online environment which has resulted in offline sexual activities.**

Meeting someone in an online environment (e.g.: chatrooms)and after information has been exchanged, you meet face-to-face and have penetrative or non-penetrative sexual intercourse.

- Never
- Rarely
- Sometimes
- More Than Not
- Always

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