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High-risk sexual behaviour, computer experience and the Internet

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NOTE TO USERS

High-Risk Sexual Behaviour, Computer Experience and the Internet

by

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Abstract

This study examined the relationships between computer use, sexually explicit material found on the Internet, and sexual attitudes and behaviours and the use of the Internet for conducting large surveys. The first issue explored if and how computer experience contributed to online behaviour and perceptions about sexually explicit material. In addition, sexual attitudes and behaviours were examined with respect to computer experience to assess potential relationships. The methodological question contrasted the use of traditional supervised paper-and-pencil survey techniques with supervised and unsupervised use of the Internet. This design allowed for comparison of use as a function of supervision and format of the survey. In terms of the methodological investigation, results indicated an interaction between survey format and location of survey within the survey booklet. When compared to both online conditions, results revealed a higher number of missing items in the paper and pencil condition, specifically near the end of the booklet. More missing items were present in a sensitive measure assessing violent conflict. There were no gender differences in terms of missing items. In terms of the high-risk and computer use investigation, results indicated that gender was a significant predictor of both positive and negative attitudes about sexually explicit material online (pop-ups, inbox and junk mail messages). Gender also predicted the likelihood to search for sexual material online. An overall higher frequency of computer use predicted comfort and expertise with computers. Future directions and implications are discussed.

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Part 1: The Relationship between High-Risk Sexual Behaviours, Computer Use and Expertise and Perceptions of Online Sexually Explicit Materials

A wealth of research has focused on the emergence of risk behaviours during adolescence (Cooper, Shapiro & Powers, 1998; Farrow & Arnold, 2003) : a critical developmental period spanning the transition from late childhood to young adulthood. The developmental transitions experienced during adolescence often require making decisions and, as such, taking risks to achieve desired goals. Many environmental and social variables impact on adolescents' risk-taking decisions and behaviour. For example, Furlong and Cartmel (1997) proposed that societal changes in education, employment, family relationships, and the pressure to be a consumer have impacted the lifestyles and beliefs of youth, resulting in a greater willingness to take risks in areas such as smoking, alcohol use, illicit drug use and irresponsible sexual behaviour.

In an attempt to explain factors related to irresponsible sexual behaviour, sexual risk-taking has become a focal area of risk behaviour research (Cooper, Shapiro & Powers, 1998; Farrow & Arnold, 2003; Horvath & Zuckerman, 1993). One important focus within this broad area is to examine where and how adolescents gain information about sexuality (Wood, Senn, Desmarais, Park, & Verberg, 2002; Whitaker & Miller, 2000). One potential source of information in particular that has garnered considerable attention is the Internet.

The Internet is particularly salient as a source of information because it provides anonymous, private access to sexual information 24 hours a day from the convenience of the adolescent's home, using a medium that most adolescents know very well. Cooper and colleagues (1998) suggested that the power of the Internet was driven by a 'Triple A Engine' consisting of accessibility (anytime, anywhere), affordability (most sites allow for free browsing), and anonymity (the ability to protect one's identity). Exploration of sexually related topics can now be conducted instantly in the privacy of one's own home, much of which is free of charge. Further, accessibility to sexual material and the Internet is easy. Volumes of sexually related sites can be accessed by simply typing the word 'sex' in the search bar of an Internet search engine. Even the most sexually explicit material that would not be easily accessible using other media can be retrieved with little effort over the Internet (Cooper *et al.*, 1998). In addition, the shyness or shame often associated with searching out sexual material from more traditional sources (e.g., family, friends, educators) is virtually eliminated due to the privacy afforded by the Internet (Carnes, 2003).

The Internet clearly provides resources that earlier generations of adolescents were not able to access. In addition to active searching, today's youth are also exposed to sexually explicit information through passive means, most notably through unwanted email messages. Considering that 84 % of Canadian computer users access email services (Dryburgh, 2001), even with filters and firewalls designed to limit or remove unwanted mail, most users experience receipt of unsolicited sexually-explicit material (including

pornographic messages and ads for sexual devices, services, surgeries and sites). Sexually explicit Internet pop-ups (advertisements for various web sites and products) and unsolicited emails or SPAM (unwanted email) have emerged along with the growing technology. While sexual material found on the Internet can be educational, some of the material is offensive and/or a poor source of accurate information (Boies, 2002). Given the vast number of young people using computers and the Internet, research is needed to understand the use of these technologies for acquiring information, as well as the impact of these technologies on youth's attitudes and sexual-risk behaviours.

The present study examined general use and expertise with computers, as well as exposure to sexually explicit material through email and Internet use to see how such exposure and experiences were related to sexual risk-taking. The first part of the literature review explores our current understanding and knowledge regarding risk-taking, specifically, risk-taking related to sexual attitudes and behaviours. The second part of the literature review examines methodological issues associated with collecting data online, by comparing traditional paper-and-pencil survey administration to online survey administration.

Risk-taking and High-Risk Behaviours

As individuals move through developmental transitions, they are faced with challenging situations that often require taking a risk. Risk-taking is defined as "an action involving the implementation of options that could lead to negative consequences" (Byrnes, Miller & Schafer, 1999, p. 367), that is, accepting a challenging task in which there is a lack of certainty and the possibility of failure.

Because the possibility of failure is ever present, risk-taking presents a potential threat to the individual. While the term 'risk' triggers negative connotations for many people, the act of risk-taking can be either adaptive or maladaptive. In the case of positive risk-taking, such as pursuing a challenging employment opportunity or trying out a new relationship, people discover, develop, and consolidate their identities (Ponton, 1997). Thus, these types of risks have a positive impact on the individual. In contrast, negative and high-risk behaviours can be psychologically and physically harmful to the individual. Such unhealthy risk behaviours include drinking, smoking, drug use, reckless driving and unsafe sexual activity (Ponton, 1997). While positive risk-taking merits investigation, typically research has focused on negative or high-risk behaviour due to the detrimental consequences of such actions. In the proposed study, only negative and high-risk sexual behaviours along with the factors that are related to risk-taking will be addressed.

High-Risk Behaviour and Sensation Seeking

While attempting to understand the nature of risky behaviour, numerous studies have looked at sensation seeking, personality, and gender as determinants of high risk behaviour (e.g., Byrnes, Miller & Schafer, 1999; Foxcroft & Lowe, 1995; Horvath & Zuckerman,1993; Zuckerman & Kuhlman, 2000). Sensation seeking, which is characterized by the desire for varied and novel experiences, and the willingness to take social, physical and legal risks to fulfill these experiences (Zuckerman, 1994) has predominantly been associated with high-risk activities. The excitement of a one-night stand or the exhilaration of

driving at fast speeds can serve as a means for arousal in sensation seekers. In fact, it is suggested that individuals who exhibit more high-risk behaviours tend to be sensation seekers (Horvath & Zuckerman, 1993). While risk-taking involves assessing both estimated risk and estimated reward (Zuckerman & Kuhlman, 2000), for sensation seekers the rewards outweigh the costs associated with risk-taking activity (Horvath & Zuckerman, 1993). In other words, for those people who crave sensation and arousal, otherwise risky and dangerous behaviours become attractive and appealing. Sensation seeking predicts reckless behaviours such as careless driving, casual sex, and illegal drug use (Arnett, 1996). Sensation seeking has also been related to sexually risky behaviour, whereby high sensation seekers reported having more sexual partners along with more permissive sexual attitudes (Zuckerman, Tushup & Finner, 1976). Similarly, Roberti (2004) reported that sexual risk-taking was related to disinhibition associated with sex. Specifically, individuals' who were less self-conscious about sex were more likely to commit risky sexual acts. In addition, high sensation seekers were less likely to use protection against disease, and tended to engage in sexual intercourse without using condoms (Arnold, Fletcher & Farrow, 2002). Due to a greater need for novel situations and thrilling experiences, sensation seekers may find themselves falling prey to everyday monotony and may be drawn into a vicious cycle where they seek out riskier and riskier experiences. The more they experience, the more excitement they crave, and thus some engage in behaviours such as substance abuse, promiscuous sex, and delinquency. (AA) possible source of excitement or risk for some individuals may

be found through exploration of the Internet for sexually explicit information. One purpose of the present study if to determine whether risky behaviour in more traditional settings is related to high-risk behaviour with the Internet. Although sensation seeking is related to high-risk behaviours, it should be noted that males and females act differently when faced with risky situations.

Gender as a Predictor of High-Risk Behaviour

Gender has been identified as a predictor of risk-taking, such that risk-taking is identified as "an attribute of male psychology" (Wilson & Daly, 1985 p.61). Overall, males engaged in more risky behaviour than females (Zuckerman & Kuhlman, 2000), and males took more risks than females even when the negative consequences associated with that risk were obvious (Byrnes, Miller & Schafer, 1999). Females, on the other hand, were less willing to take risks even in situations that were considered innocuous. In terms of sensation seeking, males scored higher than females on measures of thrill and adventure seeking, disinhibition (Zuckerman, 1991), and boredom (Zuckerman, 1994). Moreover, a study investigating gender differences in gambling and sexually risky behaviours found that males were more involved in sexually risky behaviours than females, and had higher rates of alcohol abuse than did females (Martins, Tavares, Da Silva Lobo, Galetti & Gentil, 2004).

Prevalence of Sexually Risky Behaviour in Youth Populations

Typically, sexually risky behaviours are characterized by promiscuous sex (casual sex), sex with multiple partners, and unprotected sex (no condom use) (Arnold, Fletcher & Farrow, 2002; Cooper, Shapiro and Powers, 1998;

Zuckerman & Kuhlman, 2000; Zuckerman, Tushup & Finner, 1976). The prevalence of sexually risky behaviours is well established among youth populations, with statistics showing that unprotected sexual intercourse is one of the main modes of HIV transmission in Canada, and many youth who engage in unprotected sex are doing so with multiple partners (Sexual Risk Behaviours of Canadians, 1999). Data collected in 1997 indicated that a significant proportion of sexual acts were unprotected, with 27.7% of young men and 28.1% of young women engaging in unprotected sex (did not use a condom) the last time they had sexual intercourse with a non-regular partner (Sexual Risk Behaviours of Canadians, 1999). Furthermore, in a 1994/1995 survey of adults, statistics showed that 12% to 19% of men and 6% to 7% of women had had two or more sexual partners in the previous 12 months (Sexual Risk Behaviours of Canadians, 1999).

A survey administered to teens in western Canada found that 55% of 17 year-old boys and 52% of 17 year-old girls had engaged in sexual intercourse. In addition, of these teens, 33% of boys and 30% of girls had had four or more partners. Moreover, only 57% of boys and 45% of girls who were sexually active in this age group used a condom the last time they had sexual intercourse (Sexual Risk Behaviours of Canadians, 1999).

The Internet and Sexuality

It is obvious that sexually risky behaviour is a concern and poses many health dangers to adolescents and young adults. So where are youth going for health and sex-related information? In this day and age, the media commands a

powerful role in shaping attitudes and beliefs about what is appropriate and acceptable sexual behaviour (Kaiser Family Foundation, 1996). Young adults ranked the media as the second most sought after source of sexual material and information, while sex education in school was ranked first (Kaiser Family Foundation, 1996). Over the past few decades, the World Wide Web has become a major media resource for information seeking. For example, Skinner and colleagues (2003) found that out of a sample of 210 adolescents, 56% most frequently sought or distributed Internet sexual health information. In terms of gender and age of health information seekers, a significant number of female students and older male adolescents actively sought health information online (Gray *et al.,* 2005). Further, a study examining Internet behaviour reported that 80% of young people had home Internet access. In addition, this study found that adolescents searched the Internet for health information more than did any other age group (Hanauer, Dibble, Fortin, & Col, 2004).

With the rise in computer and Internet use, it is vital to understand factors that are associated with use of the Internet. Demographic factors including age, gender and educational level related to Internet usage were examined in a study conducted by Teo in 2001. Evidence showed that frequent Internet users were mostly male, teenagers or young adults, and college educated. In terms of behaviour, males did more browsing and purchasing of products over the Internet than females. In another study investigating motivational factors, self-reported computer usage and self-predicted future usage were correlated with perceived usefulness of computers. Explicitly, perceived usefulness of computers and

perceived ease of use were significant predictor of future computer use (Davis, 1989).

A growing body of research has emerged investigating the role of computer and Internet use in problematic sexual behaviours. Initially, research focused on determining what types of Internet sexual behaviors were problematic from a clinical standpoint, and examined the association of sexual compulsive behaviours offline to behaviours online (Delmonico & Miller, 2003). Cooper and colleagues (1999) conducted a broad online survey to assess self-reported sexual behaviours on the Internet. They reported that individuals engaging in sexually compulsive behaviours offline, as defined by the Sexual Compulsivity Scale (Kalichman & Rompa, 1995) used for identifying higher sexual seeking behaviours, were also more likely to spend more time searching for sexually explicit material online. Given this relationship between online and offline behaviours among individuals who are sexually compulsive, it is important to investigate similar relationships between online and offline behaviours among high sexual risk-takers.

The present research explored the differences in attitudes toward sexual material found on the Internet. Specifically, the present investigation examined the relations between sexual attitudes and behaviours online (attitudes toward sexual material on the Internet and searching for sexually explicit material) and sexual attitudes and risky sexual behaviours offline (casual sex, sex with multiple partners, unprotected sex). Due to the relatively recent emergence of research investigating factors associated with the Internet, and the scarcity of studies

investigating high-risk behaviour and perceptions of and behaviour related to online material, the current research attempted to examine possible connections from a more exploratory perspective. Particularly, the current study sought to explain how gender was related to sensaion seeking behaviours specific to sexually risky behaviours over the Internet.

While there is limited research examining information actively sought out using the Internet, there is even less research that focuses on reactions to, and attitudes toward, unsolicited email and pop-ups. Due to the scarcity of empirical results in the area of computers and sexuality, it is vital to study reactions to sexual material encountered through computers, and specifically, through unsolicited emails and pop-ups. The intrusive nature of these Internet by-products introduces an area of Internet sexuality that warrants further research. People's ability to self-assess their reactions to sexual material is complex and may be influenced by a variety of factors, including prior experience, attitudes about sexually explicit material, and gender. Berger and colleagues (1970) found a positive relationship existed between sexual experience (i.e. numerous sexual partners) and interest in erotic materials, in that people who had more experience with sex and had permissive attitudes about sex were more likely to seek out sexual material. The findings from this study indicate a positive relationship between sexual attitudes and behaviours. Further, Goodson, McCormick and Evans (2002) proposed that individuals who accessed sexual material more frequently were more likely to have positive evaluations of their sexual behaviours over time. One suggestion that can be derived from these studies is

that prior experience and a sense of familiarity with sexual material may be related to a more positive outlook on sexual behaviours. The present study investigated this possibility.

Computer and Internet Usage and Attitudes toward Online Sexually Explicit Material

Computer usage could also play an important role in attitudes and interpretations of sexually explicit material. Research has shown that Internet behaviours in males and females differ (Ono & Zavodny, 2003). For example, Cooper and colleagues (1999) found that men more often used the Internet for sexual entertainment, while women more often used the Internet for chat rooms. Moreover, females used the Internet for messaging, whereas males used the Internet for downloading files and software (Teo, 2001). Further, it was found that males spent significantly more hours surfing the Internet than did females (Lewis, Coursol & Khan, 2001). Moreover, not only did males use the Internet more frequently (Morahan-Martin, 1998), but they also reported being more comfortable using the Internet than did females (Atwood, 1996). Research by Harrison and Rainer (1992) demonstrated that males were likely to have better computer skills. It may be concluded that a relationship exists between use and comfort in that higher levels of reported comfort may be related to increased knowledge and expertise with computers. It is possible that gender differences in terms of prior expertise with computers and the Internet (i.e., males use the Internet more, and are more familiar with computers than females) may linked to increased comfort and more positive perceptions of computer use. Further,

comfort and expertise with computers may also affect how people search the Internet and whether they search for sexually explicit material on the World Wide Web.

Gender and Online Sexual Material

Perceptions of sexually explicit material encountered via the Internet may also be affected by existing attitudes about sex. Zuckerman and colleagues (1976) found that males possessed more permissive attitudes towards sex and held fewer social and emotional criteria for sexual activities. It is postulated that because males are more likely to search for this material and have more liberal attitudes about sex in general, they may possess more positive attitudes about unsolicited sexually explicit material found over the Internet. In support, Boies (2002) conducted a survey examining student uses of and reactions to online sexual information and found that men were more likely than women to view erotic material online and offline. Men also went online at an earlier age to view sexual material. Furthermore, gender comparisons showed that women found sexually explicit material online to be disturbing, while men found it arousing. Similarly, in a survey study comparing emotional arousal of male and female college students when viewing sexually explicit material online, females tended to feel disgusted and angry toward Internet sexually explicit material, while males were more likely to be sexual aroused by such material (Goodson, McCormick & Evans, 2000).

The current study explicitly examined the relationship between experience and perceived expertise with computers, sexually risky behaviours, and attitudes

toward sexually explicit material found using the Internet or using emails. The current lack of empirical evidence calls for further research in this domain, and this study expanded the current literature by examining reactions to unsolicited sexual material on the Internet and the relationships that exist between various factors including sexually risky behaviours and computer use and expertise.

The Theory of Planned Behaviour

In order to predict behaviour, the relationships between beliefs, attitudes, and intentions must be addressed. The Theory of Planned Behaviour was developed in order to explain which factors contribute to intended and future behaviour (Ajzen, 1991; Fishbein & Ajzen, 1975). The Theory of Planned Behaviour focuses on theoretical constructs related to motivational factors that help determine the likelihood of performing a behaviour. While the overall theory consists of 5 major constructs, the proposed research will use the model as a guideline and will not uniquely address each construct. Certain components of the proposed study are mapped onto the theory to demonstrate how each construct applies to the current research (see Figure 1). Specifically, this theory highlights how attitudes, defined as the overall evaluation of a behaviour, influence behavioural intention. For example, positive attitudes towards condom use may increase the intention to use condoms.

The second component of this theory includes subjective norms, defined as the belief about whether most people approve or disapprove of a behaviour. Along with attitudes, these norms also influence behavioural intention. For example, important people such as a mother or father possess opinions and

beliefs about condom use. These beliefs are considered by the individual and may serve as an influence over the likelihood of using condoms.

The Theory of Planned Behaviour also contains the construct of perceived behavioural control, which is defined as the sense of control the individual feels they have over a behaviour (Glanz, Rimer, & Lewis, 2002). Perceived behavioural control was added in the model to account for factors outside of an individual's control that may affect intention to act and actual behaviour (Glanz, Rimer, & Lewis, 2002). This construct is particularly important for behaviours in which a person has less volitional control, such as condom use, which is dependent on availability of a condom and co-operation between two sexual partners (Sutton, McVey, & Glanz, 1999). With attitude and subjective norm held constant, the perceived ease or difficulty of a task will influence behavioural intention. This predictor was based on the idea that performance was contingent on both motivation (intention) and ability (behavioural control). For example, if a person is about to engage in sexual intercourse with a stranger, although they may have the intention to use condoms, they may feel that they have less control over condom use due to social constraints and embarrassment. In turn, the perception that there is less control may result in less intention to use condoms, and ultimately, unprotected sex.

Another component of the Theory of Planned Behaviour is behavioural intention, which is defined as the likelihood of following through with a behaviour. This component acts as a determinant of actual behaviour. If a person feels positive about condoms, feels peers approve of condom use, and feels he or she

has control over condom use, he or she may have a stronger intention to use condoms during sexual intercourse. A strong intention to act then translates into actual behaviour.

Sexual health research implementing the Theory of Planned Behaviour found that attitudes and subjective norms significantly predicted behavioural intention. Subsequently, behavioural intention significantly predicted actual behaviour (Sheeran & Taylor, 1998, as cited in Sutton *et al.,* 1999). In support, Sutton and colleagues (1999) found that a stronger intention to use condoms was also associated with a more positive attitude about condoms and a greater sense of perceived control over condom use. In addition, the subjective norms or beliefs held by current sexual partner, friends, or potential sexual partner were important in predicting intention to use condoms. Past experience with condoms was also found to be a strong predictor of intention to use condoms. Albarracin and Wyer (2000) found that attitudes about past behaviour affected the disposition to perform the behaviour again. Moreover, if a behaviour was performed more positive attitudes about that behaviour were reported. Essentially, results from path analysis showed that past behaviour had a direct effect on future attitudes about that behaviour.

Based on previous studies utilizing the Theory of Planned Behaviour, it is evident that a reciprocal relationship exists between many of the components involved in the theory. The present research examined how various self-reported behaviours and attitudes played a role in shaping future attitudes and behaviours about technology and sexuality.

The Present Study: Part 1: High-Risk Sexual Behaviour, Computers and the Internet

The first part of the present study explicitly examined sexually risky behaviour and attitudes and the relation that these behaviours and attitudes have with active Internet search activities and passive receipt of sexually explicit materials. To do this, familiarity with technology was assessed (i.e., experience, comfort and expertise) as well as specific use of computers for searching for sexually explicit materials. Reactions to unsolicited sexually explicit information were also assessed. Additionally, a behavioural measure, the likelihood of searching for sexually explicit material online, was examined in relation to sexually risky behaviours offline. Specifically, the relationship between self-reported number of sexual partners, unprotected sex and one-night stands, and attitudes towards unsolicited emails and pop-ups were explored. After exploration of these issues, the present study allowed for an examination of the relationship between attitudes and self-reported behaviours and experiences and reactions to material from the Internet.

Based on research highlighting gender differences in attitudes toward sexually explicit material, an investigation was conducted on the following hypotheses:

1.) Males may respond more positively toward unsolicited and solicited sexually explicit pop-ups and emails than females.

2.) Males may be more likely than females to search for and purchase sexually explicit materials online.

Based on the outlined research indicating a positive relationship between sexual attitudes and behaviours, the following hypotheses were tested:

3.) Higher sexual risk-takers (i.e. participate in unprotected sex, casual sex and one night stands, sex with numerous partners) may perceive unsolicited sexually explicit emails and pop-ups more positively than their lower sexual risk-taking counterparts.

4.) Higher sexual risk-takers may be more likely to actively engage in searching for and purchasing sexually explicit information over the Internet than their lower sexual risk-taking counterparts.

Based on the Theory of Planned Behaviour and the research outcomes associated with this theory, use of the computer to gain knowledge or experience with sexually explicit information may affect behaviour associated with computer use. Although the Theory of Planned Behaviour lends itself well to the investigation of many factors related to computer use, constraints in the present study best permit examination of the attitude and behavioural constructs of the Theory of Planned Behaviour. Therefore, these components of the theory were targeted in this exploratory study. Specifically, the following hypotheses related to attitudes and actual behaviour were examined:

5.) Individuals who report feeling more curious about online sexual materials may be more likely to search for sexually explicit material over the Internet.

6.) Individuals who use computers and the Internet more often may report being more comfortable with computers and may report having more expertise

with computers.

7.) Individuals who use computers and the Internet more often may be more likely to search for sexually explicit material over the Internet.

8.) Individuals who hold more positive views about sexuality may be more likely to search for sexually explicit material over the Internet.

Part 2: Methodological Issues: Paper-and-Pencil Surveys Versus Online Surveys

Social Desirability

As the World Wide Web and computers have become more prevalent, the use of online survey administration has also gained popularity within the research community. For decades, paper-and-pencil surveys offered a more economical, efficient means of collecting mass amounts of data. However, one drawback to survey administration and to self-report paper-and-pencil survey use in particular, is concern regarding social desirability (Hancock & Flowers, 2001). Social desirability reflects the tendency for an individual to respond to surveys in a way that leaves a good impression even if responses are untruthful (Martin & Nagao, 1989). In order to reduce or eliminate social desirability concerns, researchers have turned to different methods of data collection.

Effect of Researcher Presence

The use of computer-based surveys eliminates the need for a researcher to be present and, in some cases, removes all personal contact with a researcher. As a result, it has been suggested that the pressure to impress a researcher can be reduced when a survey is moved to computer administration (Evan & Miller, 1969; Martin & Nagao, 1989). Because of the absence of a

researcher and, in many cases, the traditional experimental setting during survey administration, participants may be more inclined to respond in an honest way. This is of particular importance for surveys that examine sensitive issues, including risk behaviour and sexual attitudes.

Aside from social desirability issues, the use of computers to administer questions reduces the cost and time required to administer surveys. Moreover, because every participant is viewing the same items in the same order and format, computer administered surveys also eliminate the potential for interviewer differences as a source of error (Tourangeau, Rasinski, Jobe, Smith & Pratt, 1997). Also, participants report enjoying computer administered surveys more than paper-and-pencil surveys (Baker, 1992; Salgado & Moscoso, 2003; Tourangeau, 2004).

While there appear to be many advantages to computer assisted survey administration, there may also be drawbacks. Without having a researcher present to guide participants, there is the possibility of misunderstanding questions. With no one present to clarify the question, abandonment of confusing items may occur (Nosek, Banaji & Greenwald, 2002). Legitimacy of the survey may also be compromised in the absence of a researcher. For example, the survey may not be taken as seriously by the participant (Tourangeau, 2004) and may be completed by someone other than the desired participant.

Several studies have assessed the reliability and effectiveness of computer administered survey methodology, with relatively few differences among the methods used (Gosling, Vazire, Srivastava & John, 2004; Knapp &

Kirk, 2003). Gosling and colleagues (2004) administered self-report measures to participants both online and by paper-and-pencil, and found that there were no significant differences between the two methodologies. Specifically, they found that the quality of data collected over the Internet was as good as data collected by traditional paper-and-pencil methods. Knapp and Kirk (2003) investigated the quality of data obtained across three different methodologies (logging on to a web site, calling a toll free telephone number, or completing the paper-and-pencil version) for surveys that assessed sensitive material such as sexual behaviour and illegal activities and found no differences in terms of how participants were answering items across the three conditions. With regards to social desirability, there were no differences between computerized and paper-and-pencil surveys (Hancock & Flowers, 2001).

Survey Length

Along with social desirability issues and quality of data across different methodologies, survey length is another important variable to take into account when considering computer survey administration. At present, the findings are mixed. Crawford, Couper and Lamias (2001) examined disclosure of survey length as a predictor of online survey participation, and found that shorter surveys yielded lower non-response rates than longer surveys. Correspondingly, Stanton, Sinar, Balzer and Smith (2002) conducted a review of methodological literature. They reported that longer surveys took more time to complete, had more missing data and tended to have higher rates of refusal than shorter surveys. In contrast, Heberlein and Baumgartner (1978) found that survey length

was not correlated with response rate. Specifically, they found that longer surveys had comparable response rates to shorter surveys. It is challenging to compare and understand these mixed findings, especially given differences in the lengths of the surveys used.

The Present Study: Part 2: Paper and Pencil versus Online Survey Administration

The second part of the present study examined two key features of survey administration. First, similar to previous research, the study contrasted performance outcomes (e.g., missing data) when participants completed a very long survey using traditional paper-and-pencil versus computer administrations. Second, the present study assessed the relative impact of experimenter presence when completing surveys. Specifically, in many traditional paper-and-pencil administration sessions, participants complete a survey as part of a group being supervised by a researcher, whereas in computer administration sessions participants often complete their survey off-site, unsupervised, and at their own convenience. The differences between paper-and-pencil tests versus computer administered testing, therefore, are often confounded by the presence of an experimenter. To assess the impact of the experimenter and computer versus paper-and-pencil settings, the present study was comprised of three conditions: one traditional supervised paper-and-pencil condition, one supervised computer administration condition and one unsupervised computer administration condition. This design allowed for comparison of paper-and-pencil versus computer administration, as well as the relative impact from the presence of an

experimenter. Given previous research, it was expected that males and females would respond differently to surveys of a sexual nature (Eysenck, 1974), and therefore the impact of gender was also examined across these conditions.

Method

The two questions of the present study were analyzed separately but shared the same design. The designs are identified individually below, and the methods are aggregated with notation to indicate which components of the data were used in each design.

Design *Part 1: The Relationship between High-Risk Sexual Behaviours, Computer Use and Expertise and Perceptions of Online Sexually Explicit Material*

Both analyses of variance and correlational designs were used to answer questions posed regarding the relation among attitudes and behaviours related to sexual-risk taking and online behaviours and experiences.

Design *Part 2: Paper and Pencil versus Online Survey Administration*

To address the methodological question, a 3 x 3 mixed design was used to assess the impact of survey format and survey location on completion of the surveys. The between subjects factor was type of survey format or condition (paper-and-pencil, online supervised, and online unsupervised) and the within subjects factor was location of scale within the survey (beginning, middle and end). Gender (male, female) was also investigated as a possible influence over number of missing items.

Participants

Participants were 475 undergraduate introductory psychology students (*M*

age = 19.02, *SD* = 1.73). In total, 232 males students (*M* age = 19.32, *SD* = 1.82) and 243 females students (*M* age = 18.73, *SD* = 1.59) participated, with ages ranging from 17 to 37. Participants were recruited through a research participant pool managed within a psychology department. Participants received one full credit toward their introductory psychology course for their participation. All participants were randomly assigned to one of three conditions: a traditional paper-and-pencil survey with a researcher present (n = 162), online survey with a researcher present (n = 170), and an online survey completed without a researcher present and at the convenience of the participant (n = 143). All conditions had roughly equal number of males and females (see Table 1).

Measures

Each participant was asked to complete two surveys. One survey assessed computer and Internet use, and the other survey assessed demographic information, personality, sexual attitudes and risk behaviours. For means, standard deviations and alphas for each measure refer to Table 2.

The Computer and Internet Use Survey. The Computer and Internet Use Survey assessed general computer and Internet use as well as attitudes about computers and the Internet (see Appendix A). In total, this measure contained 34 items. Items in the measure employed a variety of question types including 7-point Likert type scales, dichotomous yes or no response options, and fill-in-the-blanks. The first section of this measure contained 13 items that assessed general computer use and expertise as well as comfort with computers and the Internet. For example, participants were asked how knowledgeable they were

about using computer software. Response options ranged from 1 (*very knowledgeable)* to 7 (*not at all knowledgeable)*. Participants were also asked about how comfortable they felt when using computers. Response options ranged from 1 (*very comfortable)* to 7 (*very uncomfortable)*. This section also assessed where participants accessed the Internet and the amount of time they spent on the Internet. For example, participants were asked how often they accessed the Internet from various locations (home, parents home, friend's home, school, public library, or bookstore). Response options ranged from 1 (*never*) to 7 (*daily).*

The second section of this measure consisted of 22 items that assessed Internet use, and attitudes towards sexually explicit material (unsolicited emails, pop-ups) found on the Internet. Participants were asked about their attitudes and feelings toward unsolicited sexual material found in email inboxes, junk mail and through pop-ups. For example, participants were asked to indicate how appropriately a series of affective labels describes their response to unsolicited sexual material (e.g. feel indifferent, find it enjoyable). The response options ranged from 1 (*never true of me*) to 7 (*absolutely true of me).* In addition, participant behaviour was assessed, with items asking about the likelihood of searching for sexually explicit material over the Internet. In these items participants were asked how likely they are to explore sexually explicit pop-ups and unsolicited emails. The response options for these items ranged from 1 (*not at all likely*) to 7 (*definitely likely*). Participants were also asked how often they have intentionally accessed sexually explicit material on the Internet. The

response options ranged from 1 (*never)* to 7 (*always).* Some of the individual items on the survey were aggregated to form a composite measure. Specifically, three composite measures were constructed; Comfort and Expertise with Computers (α = .85), Feelings toward Unsolicited Sexually Explicit Materials including overall positive attitudes toward SEM (α = .88) and overall negative feelings toward SEM (α =.84), and the Likelihood to Search for Sexually Explicit Materials Online (α = .85). All of the alpha levels suggest high reliability for these measures.

The Anonymous Personality and Sexual Attitudes Survey. The other survey was prepared in two formats; a booklet and online presentation. The booklet was a 23 page booklet entitled The Anonymous Personality and Sexual Attitudes Survey, containing a total of 22 individual measures. This survey booklet was used as part of a larger international investigation. Although all participants were given the entire survey to complete, only certain selected measures were selected for use in the present study. Specifically, only the items pertaining to high-risk and social desirability items were used. Other measures in the package assessed cultural and personality issues which were not the target of the present research. The measures used in the present study are outlined in the following section.

The first section of this survey assessed demographic information (See Appendix B, section entitled Personal Information and Family History) including age, gender, socio-economic status, and religious affiliation. This survey also contained a series of other measures that assessed personality (Balanced

Inventory of Desirable Responding and Big Five Inventory), relationships (Anonymous Romantic Attraction Survey and The Relationship Questionnaire), sexual attitudes (Sexual Attitudes Inventory), sexual behaviours (Sociosexual Orientation Inventory), and risk behaviours (HIV/AIDS Risk Behaviour Form).

The Balanced Inventory of Desirable Responding (BIDR) version 6 – Form 40A (Paulhus, 1984). This measure consisted of 40 items assessing social desirability tendencies and employs a 7-point Likert scale (see Appendix C). The BIDR consisted of two subscales, impression management (IM) and self-deceptive enhancement (SDE). A total score of 20 was possible for each subscale, with a possible overall score of 40 for the entire measure. Higher scores indicated more socially desirable responses. Participants were asked to respond to statements such as "I always know why I like things", with response options ranging from 1 (*not true*) to 7 (*very true*). Reliabilities for the subscales were .77-.85 (IM) and .67-.77 (SDE) based on a sample of undergraduates from the University of British Columbia. A Cronbach alpha for the overall measure was calculated for the present sample with an outcome of .59 suggesting slightly lower reliability than reported in previous assessments. Reliability was calculated for each of the individual subscales, revealing alphas of .35 for the IM subscale and .50 for the SDE subscale.

The Sociosexual Orientation Inventory (SOI) (Simpson & Gangestad, 1991). This measure appraised number of sexual partners and assessed attitudes about casual sex. This measure contained 7 items employing 8 and 9-point Likert type scales as well as fill-in-the-blank to examine the number of sex

partners a participant saw him or herself having, as well as his or her attitudes about casual sex (see Appendix D). Reliability for this measure as reported by the authors was an alpha of .83. A Cronbach alpha for the overall measure was calculated for the present sample with an outcome of .81 indicating similar levels of reliability to those reported by the original authors.

The HIV/AIDS Risk Behaviour Form (RBF). This measure assessed HIV and AIDS risk related behaviours and the likelihood of contracting such diseases. This measure contained 23 items employing a dichotomous yes or no response option, as well as fill-in-the-blank, to examine the number of sexual partners a participant has ever had and check boxes to assess the number of ailments a person has had or currently has (i.e. AIDS, Diabetes, Venereal Disease). Sample items from this measure included "Have you ever had sex (including oral, anal, or vaginal sex) with a man (circle one)?" and "Have you ever had unprotected sex with a woman (i.e. without using condoms)?". Response options for these items included yes or no. (See Appendix E). A Cronbach alpha for the overall measure was calculated for the present sample with an outcome of .33.

"How Accurately Can You Describe Your Sexuality?" (Schmitt & Buss, 2000). This measure assessed individual perceptions of one's sexuality. This measure contained 69 items employing a 9-point Likert type scale which used adjectives to describe how a person saw their own sexuality. Participants were asked how accurately each adjective described their sexuality with response options ranging from 1 *(extremely inaccurate)* to 9 *(extremely accurate)* (see Appendix F). A Cronbach alpha for the overall measure was calculated for the

present sample with an outcome of .81.

The Self Report Psychopathy Scale-III-A (SRP-III-A) (Paulhus, Hemphill & Hare, in press). This measure assessed self reported psychopathic behaviours in four areas, Antisocial Behaviour, Interpersonal Manipulation, Cold Affect, and Impulsive Thrill Seeking. This measure contained 30 items employing a 5-point Likert type scale with response options ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items from this measure included "I enjoy driving at high speed" and "I enjoy taking chances" (see Appendix G). Reliabilities for each subscale were as follows, (Antisocial Behaviour = .91, Interpersonal Manipulation = .76, Cold Affect = .74, Impulsive Thrill Seeking = .67) with an overall reliability of .88. A Cronbach alpha for the overall measure was calculated for the present sample with an outcome of .75. For the purposes of this analysis, only the Impulsive Thrill Seeking subscale was examined to isolate high-risk sexual behaviour, and the present sample yielded an alpha of .75 indicating a moderately high reliability when compared to the original sample as reported by the authors.

For the online portion, each survey consisted of boxes or drop down tabs that could be easily selected by clicking on the space provided with the mouse. Participants were given the option to leave items blank as they completed the surveys.

For scoring procedures for each scale, see Appendix H.

Procedure

At the outset, participants were provided with a letter of introduction and

asked to provide their consent (see Appendix I). Participants were randomly assigned to one of three conditions. One group completed the survey using a standard paper and pencil methodology, and completed the survey in separate cubicles under the general supervision of a researcher. In the second condition (online supervised), participants completed the survey online, in a computer lab setting where a researcher supervised individuals working on the computers. Each participant had access to their own computer. Similar to the paper-and-pencil condition, groups of participants completed the survey online at the same time and completed each survey independently. In the third condition (online unsupervised), participants completed the survey online using any computer (home, school, café etc.) and at any time they chose without a researcher present. Participants in the unsupervised condition were asked to complete the survey online within three days of initially meeting with a researcher so as to limit the time in between survey completion. Participants in all three conditions completed a paper and pencil version of the Computer and Internet Use survey.

For the online conditions the Anonymous Personality and Sexual Attitudes Survey was converted into an electronic format that could be accessed through the university psychology research site. Each participant was signed in by the researcher in advance so that they could access the survey online at any time. Once signed into the site, they could click on the survey icon and proceed to fill out the survey. The surveys were counter balanced in each condition, with half of the participants receiving the Computer and Internet Use Survey first, and half receiving the Anonymous Personality and Sexual Attitudes Survey first.

Given the importance of confidentiality for these sensitive types of materials, all participants were assured that their data would be stored anonymously. For those participants completing the paper-and-pencil surveys, there were cubicles separating each participant from their neighbour, so as to limit the chance of someone seeing their answers. When completing the survey online, participants were seated at every other computer terminal so that no one else could see their responses.

Upon completion of the surveys, all participants were given a feedback letter describing the study in more detail, and a list of relevant references (see Appendix J).

Results

Part 1: High-Risk Sexual Behaviours, Computer Use and Expertise and Perceptions of Online Sexually Explicit Materials

An initial sample of 484 participants was collected. The decision was made to only analyze the responses of heterosexual individuals to avoid any possibly confounding effects of sexual orientation. After removal of all the bisexual and gay and lesbian data, the reported overall sample size of 475 was used in the analyses. Refer to table 3 for the intercorrelations of each high-risk measure and table 4 for the intercorrelations for the affective measures (positive affect and negative affect toward all three type of sexually explicit material).

Differences in Attitudes toward Sexually Explicit Materials Online as a function of Gender

Two 3 (type of material) X 2 (gender) repeated measures analyses of

variance (ANOVAs) were conducted to examine whether attitudes towards sexually explicit materials found on the Internet via pop-ups, inbox messages, junk mail messages varied as a function of gender. The within subjects factor was the type of the sexually explicit material (i.e., pop-ups, inbox messages and junk mail messages). The between subjects factor was gender.

The first ANOVA examined overall positive attitudes toward these sexually explicit materials and the second ANOVA examined overall negative attitudes toward these sexually explicit materials.

For the first ANOVA there were significant main effects for gender F (1, 473) = 62.41, $p < .001$ and for type of material F (2, 473) = 50.31, $p < .001$. However, these main effects were qualified by a significant interaction of gender by type of material, F (1,473) = 10.15, $p < .002$. For males, pop-ups and inbox messages were received more positively than junk mail. For females, inbox messages were received the most positively followed by pop-ups, and finally junk mail messages, which were received the least positively (see Figure 2).

Post hoc T-tests were also conducted to determine whether males and females differed in their positive attitudes across each of the sources. While results from the repeated measures ANOVA indicated that the interaction of gender by type of material was significant, t-tests revealed that males were significantly more positive than females toward each of the sources of sexually explicit information overall. However, visual examination of the means indicated that there was a larger mean score difference between males and females for pop-ups than the other two sources (Mean difference = 2.26 for pop-ups, Mean

difference = 1.64 for inbox messages and Mean difference = 1.51 for junk mail) This indicates that the interaction may be that males were significantly more positive than females towards pop-ups in particular. Effect sizes were calculated for each of the mean difference scores to assess the degree to which each of the means differed from one another. According to Cohen (1988), the cut-off for a small effect size in .20, a medium effect size is .50 and a large effect size if .80. The difference between pop-ups and junk mail messages yielded an effect size of .84 indicating a large difference. The difference between pop-ups and inbox messages yielded an effect size of .69 indicating a large difference. The difference between inbox and junk mail messages yielded an effect size of .25 indicating a small difference. These results are consistent with the results from the t-tests, which indicated that males and females differed in attitudes for each type of sexually explicit material. However, the effect sizes lend support to the suggestion that males and females differed the most in terms of their positive attitudes toward pop-ups.

The second 3 (type of material) X 2 (gender) ANOVA examined overall negative attitudes toward the three types of unsolicited sexually explicit materials. There were significant main effects for gender F (1, 473) = 29.57, $p < .001$ and type of material F (2, 473) = 70.92, $p < .001$, such that females (M = 15.18) expressed more negative attitudes towards the sexually explicit material than males (M = 13.21). Additionally, participants were more negative towards inbox messages (M = 15.13) than they were toward pop-ups (M = 14.15) and junk mail (M = 13.30). There were no significant interactions.

High-Risk Behaviour as a Predictor of Attitudes toward Online Sexually Explicit Materials

Six linear regression analyses were performed to test the effect of various sexual risk related measures on overall feelings toward online sexually explicit materials. In each of the analyses, the following sexual risk measures, The Sociosexual Orientation Inventory, the HIV/AIDS Risk Behaviour Form, the "How Accurately Can You Describe Your Sexuality" scale, and the Self-Report Psychopathy Scale – III- A, were entered simultaneously as predictor variables. Gender was also included as a potential predictor of feelings toward online sexually explicit material. Analyses were conducted by examining both positive and negative feelings toward three types of sexually explicit material (pop-ups, inbox messages and junk mail messages).

The first regression analysis was conducted to see if any of the sexual risk measures and gender were significant predictors of positive affect toward sexually explicit pop-ups. The overall model was significant, $R^2 = .15$, F (9, 465) = 9.209, $p < .001$. Upon closer examination, results revealed that gender was the only significant predictor of positive feelings toward sexually explicit pop-ups (β = -.38, $p < .001$). Overall, females felt less positive than males about online sexually explicit pop-ups. None of the sexual high-risk measures predicted positive feelings toward pop-ups.

The second regression analysis examined whether the same factors predicted negative affect toward sexually explicit pop-ups. The overall model was significant, $R^2 = .09$, F (6, 468) = 7.321, $p < .001$. Gender and AIDS/HIV risk

behaviour were significant predictors of negative feelings toward sexually explicit pop-ups ($\beta = .25$, $p < .001$ and $\beta = .13$, $p < .02$, for gender and AIDS/HIV risk behaviour respectively). Females felt more negatively than males about online sexually explicit pop-ups. Individuals reporting more AIDS and HIV high-risk behaviour were more likely to feel negatively toward sexually explicit pop-ups.

To determine whether there was a significant interaction between gender and AIDS/HIV high-risk behaviour, a followup hierarchical linear regression was conducted. In this regression, consistent with the previous analysis, gender and AIDS and HIV risk behaviour were entered simultaneously in the first step, and the interaction term was entered in the second step. Results revealed that the interaction was not significant (FCha = .590, $p > .05$)

The third regression analysis was conducted to see if any of the sexual risk measures and gender were significant predictors of positive affect toward sexually explicit inbox messages. The overall model was significant, $R^2 = .05$, F (6, 468) = 4.154, $p < .001$. Gender was the only significant predictor of positive feelings toward sexually explicit inbox messages ($\beta = -.19$, $p < .001$), in that females felt less positive than males about sexually explicit inbox messages.

The fourth regression analysis examined whether the same factors significantly predicted negative affect toward sexually explicit inbox messages. The overall model was significant, $R^2 = .05$, F (6, 468) = 4.100, $p < .001$. Gender was the only significant predictor of negative feelings toward sexually explicit inbox messages ($\beta = .19$, $p < .001$). Specifically, females felt more negatively than males about sexually explicit inbox messages.

The fifth regression analysis was conducted to see if any of the sexual risk measures and gender were significant predictors of positive affect toward sexually explicit junk mail messages. The overall model was significant, $R^2 = .10$, F (6, 468) = 8.181, $p < .001$. Again, gender was the only significant predictor of positive feelings toward sexually explicit junk mail messages ($\beta = -.29$, $p < .001$), with males reporting more positive feelings toward sexual junk mail messages than females.

The sixth regression analysis examined whether the same factors predicted negative affect toward sexually explicit junk mail messages. The overall model was significant, $R^2 = .05$, F (6, 468) = 3.848, $p < .001$. Gender and AIDS/HIV risk behaviour were significant predictors of negative feelings toward sexually explicit junk mail messages ($\beta = .16$, $p < .001$ and $\beta = .13$, $p < .02$, for gender and AIDS/HIV risk behaviour respectively). Overall, females felt more negatively than males about sexually explicit junk mail messages. In addition, individuals reporting engaging in AIDS and HIV risk behaviour felt more negatively about sexually explicit junk mail messages than their less risky counterparts.

To determine whether there was a significant interaction between gender and AIDS/HIV high-risk behaviour, a followup hierarchical linear regression was conducted. In this regression, consistent with the previous analysis, gender and AIDS and HIV risk behaviour were entered simultaneously in the first step, and the interaction term was entered in the second step. Results revealed that the interaction was not significant (FCha = 1.148, $p > .05$).

In summary, gender was the predominant predictor of attitudes toward sexual material encountered online. Males were consistently more likely than females to feel more positive and less negative about all three types of sexually explicit material (pop-ups, inbox messages and junk mail messages). Moreover, higher occurrences of reported AIDS and HIV risk behaviour were also predictive of more negative feelings toward sexually explicit pop-ups and junk mail.

High-Risk Sexual Behaviour and Gender as Predictors of Searching Behaviour

High-risk sexual behaviour (as assessed by the high-risk measures) and gender were examined to see whether they were significant predictors of the likelihood of searching for sexually explicit materials over the Internet.

A linear regression analysis indicated that the overall model was significant, $R^2 = .25$, $F\ (9, 465) = 17.155$, $p < .001$. Although none of the sexual high-risk measures significantly predicted searching behaviour, results showed that gender was a strong predictor of the likelihood to search for sexually explicit materials on the Internet, $\beta = -.49$, $p < .001$. Specifically, males were more likely to search for sexuality explicit online material than females.

In a second analysis, a 2 (gender) X 4 (location) repeated measures ANOVA was conducted to examine whether males and females differed in their purchasing behaviour for erotic materials online, depending on the location of purchase. The within subjects factor was location of purchase (at the convenience store, at the adult only store, through the Internet: mailed to your home, and on the Internet: online access only) and the between subjects factor was gender. There was a significant main effect of gender ($F\ (1, 473) = 51.04$, p

< .001) with males (M = 1.42) purchasing erotic material more than females (M = 1.09). There were no significant differences as a function of location, nor was there a significant interaction (largest F = .50, p > .50, *ns,* for the interaction).

Curiosity as a Predictor of Searching Behaviour

A regression analysis was run on gender and curiosity about sexually explicit material as predictors of searching sexually explicit materials online. The overall model was significant, R^2 = .52, F (2, 472) = 410.82, p < .001. Results indicated that both gender (β = -.35, p < .001) and curiosity (β = .64, p < .001) were strong predictors of whether or not participants were likely to search for sexually explicit materials online. Specifically, males were more likely than females to search for sexual material online. Additionally, participants who reported being more curious about sexually explicit material were more likely to actively engage in searching sexually explicit pop-ups, and unsolicited emails over the Internet.

Lastly, as a check, an independent t-test was run on curiosity about sexually explicit material to see whether this factor differed for males and females. Results indicated that males and females differed on levels of curiosity toward sexually explicit material online (t (463) = 4.646, p < .001). Examination of the means showed that overall, males (M = 3.839) were more curious about online sexual material than females (M = 2.984).

In summary, gender consistently predicted the likelihood to search for sexual material online. Specifically, males were reliably more likely than females to search for sexually explicit material online and purchase erotic materials both

online and through stores. Curiosity was related to likelihood to search, showing that participants who were more curious about online sexual material were also more likely to search for these types of materials online. Lastly, curiosity differed for males and females, with males reporting being more curious about sexual material online than females.

Computer and Internet Use as a Predictor of Comfort and Expertise with Computers

Overall reported computer and Internet use was investigated to see whether this factor had any bearing on reported comfort and expertise with computers. The predictor variables that were examined included: time spent using computers (i.e. hours and minutes per week), frequency of time spent accessing the Internet from various locations (.e. home, school, library, café), frequency of computer use over the last 6 months for various reasons (i.e. communication, entertainment, shopping), and frequency of downloading files. Gender was also entered as a predictor variable to examine if males and females differed on reported levels of comfort and expertise.

A linear regression was run with each of the variables above entered into the model simultaneously as predictors of comfort and expertise with computers. The overall model was significant (R^2 = .25), F (31, 443) = 4.036, p < .001. Specifically, frequency of accessing the Internet from home (β = -.11, p < .02), frequency of accessing the Internet from a friend's home (β = -.16, p < .003), using the Internet for instant messaging in the last 6 months (β = -.10, p < .03), using the Internet for personal financing in the last 6 months (β = -.13, p < .007)

and downloading files (β = -.25, $p < .001$) were all significant predictors of reported comfort and expertise with computers. Gender was not a significant predictor of comfort and expertise with computers (β = .09, *ns)*.

In summary, the more time spent on all of the above activities, the more comfortable and knowledgeable participants reported being with computers and the Internet.

Frequency of Computer and Internet Use and Positive Attitudes about Sex as Predictors of the Likelihood to Search for Sexually Explicit Materials Online

A linear regression analysis was conducted to examine frequency of computer and Internet use and positive attitudes about sex in general as predictors of the likelihood to search for sexually explicit materials found online. The overall model was significant, $R^2 = .03$, $F(3, 471) = 7.65$, $p < .001$. Both frequency of computer and Internet use and positive attitudes about sex predicted the likelihood to search the Internet for sexually explicit materials (β = -.14, $p < .002$, and β = .11, $p < .017$, for frequency of computer and Internet use and positive attitudes about sex, respectively).

In summary, individuals who reported lower levels of computer and Internet use and more positive attitudes about sex were more likely to search for online sexually explicit material.

Brief Discussion of Part 1

The purpose of the current research was to examine the relationships between attitudes toward sexual material found online, sexually risky behaviour, and general computer and Internet use. In total, 8 hypotheses were tested. The

majority of the hypotheses were supported. The following section addresses each hypothesis.

Hypothesis 1: Gender as a Predictor of Attitudes toward Sexually Explicit Material Online

It was hypothesized that males would receive sexually explicit materials online more favourably than females. This hypothesis was supported. Both males and females were asked to use a word list containing positive and negative affect words from which participants had to identify how much each of these words captured their feelings toward receiving sexually explicit materials from pop-ups inbox and junk mail sources.

When comparisons of the positive affect words were examined, as expected, positive attitudes differed for men and women. Interestingly, this gender difference was a function of the type of material, whereby males and females reacted differently for each type of sexually explicit material (pop-ups, inbox messages and junk mail messages). Overall, males were more positive than females about pop-ups in particular.

As hypothesized, when negative feelings were assessed, only gender differences emerged with females reporting feeling more negative toward all three types of sexually explicit material than males.

Hypothesis 2: Gender as a Predictor of Searching for and Purchasing Sexually Explicit Material Online

It was hypothesized that males would actively search for online sexual material and purchase sexually explicit materials from various locations more often than females. This hypothesis was confirmed.

Comparisons of searching behaviour in males and females revealed that males were more likely to search for sexual material online than females. Males were also more likely to purchase erotic material from various locations than were females. Furthermore, in terms of purchasing pornographic materials through various locations (at a convenience store, at an adult's only store, over the Internet and mailed to your home, and over the Internet and accessed online), results indicated that regardless of location, males were more likely to actively purchase pornography than females.

Hypothesis 3: High-Risk Sexual Behaviour as a Predictor of Attitudes toward Online Sexually Explicit Material

Various sexual high-risk measures were assessed to examine whether they predicted attitudes toward sexual material online. It was hypothesized that individuals who reported participating in high-risk sexual behaviour would possess more positive attitudes about sexually explicit material online. While not all of the sexual high-risk measures significantly predicted attitudes, AIDS and HIV risk behaviour did. While one of the high-risk measures significantly predicted attitudes, the direction of the relationship was opposite of what was expected.

Specifically, the analysis revealed that reported AIDS/HIV risk behaviour significantly predicted negative feelings toward pop-ups and junk mail messages,

in that, higher levels of reported sexual risk behaviour significantly predicted more negative feelings about pop-ups and junk mail messages.

Gender was also entered as a predictor variable for this analysis. Again, as expected, gender predicted both positive and negative feelings toward all three types of sexually explicit material (pop-ups, inbox messages and junk mail messages). Specifically, males felt more positive and less negative than females toward online sexual material. There were no significant interactions between gender and AIDS and HIV risk behaviour.

Hypothesis 4: High-Risk Sexual Behaviour and the Likelihood to Search for Sexually Explicit Materials Online

The likelihood to search for sexually explicit materials online was examined as a function of several predictor variables (i.e., measures of sexually risky behaviour and gender). Although it was hypothesized that participating in high-risk sexual behaviour would predict an increased likelihood to search for sexual material on the Internet, this expectation was not supported.

Hypothesis 5: Curiosity as a Predictor of the Likelihood to Search Sexually Explicit Materials Online

It was hypothesized that higher levels of reported curiosity about online sexual material would predict an increased likelihood to search for sexual materials online. This hypothesis was supported. Results revealed that the more curious participants were in regards to sexually explicit materials online, the more likely they were to actively search for these materials online. Results also indicated that males and females differed in their levels of curiosity toward

sexually explicit material found online, with males reporting higher levels of curiosity than females.

Hypothesis 6: Predictors of Comfort and Expertise with Computers and the Internet

It was hypothesized that as participation in computer related activities increased, so would comfort with computers and the Internet. This hypothesis was supported. Gender was also examined as a potential predictor of reported comfort and expertise with computers and the Internet.

Results showed that frequency of computer and Internet use significantly predicted levels of comfort and expertise. Specifically, a higher reported frequency of accessing the Internet from home and from a friend's home, a higher reported frequency of downloading files, and more frequent use of personal financing and instant messaging in the past 6 months all predicted higher levels of comfort and expertise with computers and the Internet. Contrary to Atwood's study (1996), no gender differences were found on levels of reported computer comfort and expertise.

Hypotheses 7 and 8: Frequency of Computer and Internet use and Attitudes about Sexuality as Predictors of Searching for Sexual Material Online

It was hypothesized that higher levels of computer and Internet use, and more positive attitudes toward sex would predict a greater likelihood of actively exploring sexual material online. Only one of these hypotheses was supported.

Surprisingly, results showed that lower levels of overall computer and Internet use predicted an increase in searching behaviour. As expected, more

positive attitudes about sex predicted an increased likelihood of searching the Internet for sexual material.

Part 2: Paper and Pencil versus Online Surveys and the Effect of Researcher Presence on Missing Items

Three conditions (paper and pencil, online supervised and online unsupervised) were contrasted to test for possible differences in survey completion as a function of the format of the survey. Survey administration during the paper-and-pencil and online supervised conditions were both supervised by a researcher, while the online unsupervised condition was not. The online supervised and online unsupervised conditions were completed on a computer while the paper-and-pencil condition was completed by hand.

Social Desirability

To determine whether supervision and survey format would affect levels of socially desirable responding, the Balanced Inventory of Desirable Responding (BIDR) was assessed across conditions.

Three one-way analyses of variance (ANOVAs) were conducted, one for the total social desirability scale and one for each of the two sub-scales (self-deceptive enhancement and impression management). There were no significant main effects, largest F (2, 472) = 1.158, p > .315, *ns.*, for self-deceptive sub-scale. Descriptive statistics showed that the mean scores for the subscales were very low (M = 1.21 and M = .28, for self deceptive enhancement and impression management respectively), indicating that the participants were not answering in a socially desirable way (see Table 5).

Missing Values

To determine whether completion of survey items might be influenced by survey format (paper and pencil versus online), examinations of missing data were conducted. For each item on each scale of the survey, a missing value was given a score of 1 and all completed responses were given a score of 0. To assess frequency of missing items among the 3 conditions (paper and pencil, online supervised and online unsupervised), three analyses were conducted. First, an overall examination was conducted on overall number of missing items. A total missing value score was calculated by summing the number of missing items across all measures. A one-way ANOVA was conducted on the three conditions (paper and pencil, online supervised, and online unsupervised) to assess differences in missing values in each condition. There were no significant differences (F (2, 472) = .384, p > .681, *ns.*) overall as a function of condition.

Examining Missing Values as a Function of Location within the Survey

An analysis was conducted to determine whether there were differences in missing items in the 3 conditions as a function of the length of the survey. Therefore, the total number of measures (excluding demographic information) in the survey booklet was calculated (21 measures) and divided into three equal sections (7 measures per section), representing scales at the beginning, middle and end of the survey[1].

[1]An alternative analysis was considered whereby the booklet was analyzed by item rather than by measure. We opted against this alternative form of analysis due to the fact that analyzing missing items by item would require whole measures to be split, thereby compromising the integrity of the measures.

A 3 x 3 repeated measures ANOVA was conducted on the aggregated mean scores across measures with condition as the between subjects factor and location (beginning, middle and end) as the within subjects factor. There were significant main effects for both condition F (2, 472) = 3.007, $p < 0.05$ and location F (1, 472) = 124.09, $p < .001$. These main effects were qualified by a significant interaction of condition and location F (2,472) = 3.932, $p < .020$. Overall, there was a steady increase in missing items, with the fewest mean number of missing items in the first third of the survey booklet (M = .24), followed by the second and final third of the survey booklet (M = 2.06 and M = 7.82 respectively). Moreover, as seen in Figure 3, the number of missing items increased dramatically by the end of the survey for the paper-and-pencil condition in particular (M = .113, M = 2.240 and M = 10.294 respectively).

Examining Missing Values as a Function of Gender

A one-way ANOVA was conducted with gender as the between subjects factor to see whether there were differences in overall number of missing items between males and females. There was no significant effect of gender (F (1,473) = .774, p >.379, *ns)*.

Exa*mining Missing Values as a Function of the Sensitivity of the Measure*

Within the survey, there were scales assessing personality, demographic information, sexual behaviours and sexual violence. The latter sensitive measures (sexual behaviours and sexual violence) were assessed to determine whether there were differences among the conditions in terms of missing items. Four scales in total were identified as being more sensitive in nature based on

the topics being measured (Violence Assessment Index, Sexual Behaviours Inventory, Dyadic Sexual Regulation Scale and the HIV/AIDS Risk Behaviour Form). These scales asked very detailed questions about sexual practices and/or violence in relationships. Four one-way ANOVAs were conducted, one for each measure. Only the one-way ANOVA for the Violence Assessment Index analysis was significant F (2, 472) = 10.270, p <.001. In terms of missing items on the Violence Assessment Index, Tukey-b post hoc comparisons indicated that the two online conditions did not differ (M = 3.53 and M = 4.48, online supervised and online unsupervised respectively), but that the standard paper-and-pencil test yielded far more missing items that either of the online conditions (M =10.01) (see Figure 4).

Brief Discussion of Part 2

For the second part of the current study, which investigated methodological issues associated with paper-and-pencil and online survey administration, the analyses were exploratory in nature and therefore no specific outcomes were hypothesized.

Social Desirability

In the present study, no differences were found in terms of socially desirable responding across the three conditions (paper-and-pencil, online supervised and online unsupervised) suggesting that social desirability did not differentially impact the outcomes in any given condition.

Missing Items as a Function of Condition

Although there were no differences in terms of missing items across each of the three conditions (paper-and-pencil supervised by a researcher, online supervised by a researcher, online not supervised by a researcher) when the full survey was examined as one complete instrument, when more sensitive analyses were conducted significant differences did emerge. Specifically, there were more missing items in the paper-and-pencil condition than in the two other online conditions, specifically, near the end of the survey than the beginning and middle of the survey.

The presence or absence of the researcher did not impact completion of the surveys.

Sensitivity of Measure

Examination of more sensitive measures within the overall booklet revealed that in particular, for the Violence Assessment Index, there were more missing items present in the paper-and-pencil condition than in either of the two online conditions.

General Discussion

The current study combined two important aspects of technology research. By establishing patterns between variables associated with computer and Internet use and various online behaviours, a clearer understanding of the nature of online activities can be ascertained.

Further, exploring the quality of data obtained through online surveys has allowed for a more valid interpretation of the results presented in the current research. Without properly assessing the differences between traditional paper-

and-pencil and computer administered methodologies, comparison of data obtained through the two forums cannot be accurately assessed.

Part 1: High-Risk Sexual Behaviour and Computer and Internet Use

Examination of attitudes toward sexually explicit material, sexually risky behaviours, and reported computer and Internet comfort and expertise was conducted to see how these factors were related.

According the past research, males and females differ in their perceptions of sexuality and sexual material, whether it be online or in the real world (Boies, 2002; Goodson, McCormick & Evans, 2000; Khoo & Senn, 2004; Zuckerman *et al.,* 1976). For example, males tend to have more permissive attitudes about sex in general (e.g. Zuckerman *et al.,* 1976). Consistent with research, the current study found that males reported feeling more positive about and accessed sexual material online more often than females. In particular, males reported feeling more positive toward pop-ups. It could be that the more intrusive nature of pop-ups and the lack of control over exposure (i.e. pop-ups appear instantly in front of the viewer) may have contributed to less positive perceptions of this type of sexually explicit material, especially for females. Also, there could be something about the content presented in pop-ups that is different, and potentially more explicit than either inbox messages or junk mail messages.

It has been suggested by Goodson and colleagues (2002) that the more people access certain types of sexual information, the more positive they feel about that material. Positive attitudes toward sexually explicit material as reported by males may be a result of familiarity and curiosity with online sexual

materials. As evidenced in the current study, males were more curious about sexual material online. Because males are more curious about erotic materials and access these materials more often than females, when males are faced with unsolicited sexually explicit materials online (i.e. pop-ups and emails), they react in a more positive way. Females on the other hand, may be less familiar with erotic materials. It could be that due to lack of exposure and familiarity, females react in a more negative way when encountering online sexual materials. It is also possible that females find sexual material online to be degrading to females, and therefore feel more negatively when encountering such material.

The differences between males and females points to more than just differences in gender but rather, these differences may reflect more complex social underpinnings. One important consideration whenever examining gender differences is the social context in which females and males develop. The topic of sexuality is one that may be perceived as more socially desirable for males than for females. These differences in "acceptability" and "desirability" may explain how the genders come to differ. For example, in terms of both attitudes and behaviours toward sexually explicit material found online, males may not possess the same social constraints over what is acceptable and what is not.

While gender differences in attitudes were consistent, upon examination of high-risk behaviour as a predictor of attitudes, only AIDS and HIV risk behaviour was predictive of attitudes toward sexually explicit material online. Specifically, individuals who reported engaging in high sexual risk behaviour had less positive views of sexual material online. While their behaviours may reflect endorsement

of sexual acts, their attitudes do not. This discrepancy between attitudes and behaviours may be mediated by another factor, such as lack of sexual self-esteem or conflict with moral values. It is also possible that the personal fable, which is the belief that what happens to others can't happen to the self, may contribute to sexual risk taking. It is easy to think that risky behaviours are bad, but participating in them is another issue. Further research investigating this may include additional assessment of the domains of the sexual self in these types of individuals. No significant interactions were found between gender and the AIDS and HIV risk behaviour measure.

Aside from the AIDS and HIV risk behaviour measure, the other high sexual risk taking measures used in the current study were not significant predictors of attitudes toward sexual material online. It should be noted that the alpha levels for some of the measures used were quite low (including both the alphas from the original sample and the current sample), and may have affected the data. These measures may have been less effective than other potential measures in isolating high-risk sexual behaviours in the current sample.

In reference to searching behaviour, research has found that, typically, males are more likely to view erotic materials online and are less offended by online sexual material than are females (e.g. Boies, 2002; Khoo & Senn, 2004). Results from the current study also found that males reported accessing and purchasing sexually explicit materials more often than females. The findings of the current study are consistent with previous research exploring Internet use for sexual entertainment, which has found that males were significantly more likely

than females to have accessed sexual materials (Boies, 2002; Goodson, McCormick & Evans, 2001) and did more browsing than did females (Teo, 2001).

In terms of theoretical support, gender differences in searching behaviour can be applied to the Theory of Planned Behaviour (Ajzen, 1991). The theory states that attitudes lead to the intention to act, which then leads to actual behaviour. If males possess more positive attitudes about sexual material online, they may be more likely to actively search for erotic materials online. Consistent with the Theory of Planned Behaviour (Ajzen, 1991), males not only reported possessing more positive attitudes overall toward sexually explicit material online, they also reported actively exploring sexually explicit web sites and purchasing pornographic material more than females.

In terms of high-risk sexual behaviour as a predictor of searching the Internet for sexually explicit material, none of the sexual high-risk measures were significant predictors. Although past research has demonstrated a significant relationship between sexual behaviours online and sexual behaviours offline (Delmonico & Miller, 2003) the current study did not replicate these findings. The lack of relation between the high sexual risk measures and searching behaviour may again be attributable to the low reliabilities obtained for some of the high-risk measures. Some of the measures used in the current study may not have effectively isolated sexually risky behaviour, therefore the relationships between factors did not come out significant.

The Internet is continuing to grow rapidly in popularity as a means for communication, entertainment and information seeking (Dryburgh, 2001).

Investigation of the factors that are associated with reported comfort and expertise with computers and the Internet is vital for understanding which aspects affect the user experience.

Although previous studies have reported the males were more comfortable with computers than females (Atwood, 1996) and also had better computer skills then females (Harrison & Rainer, 1992), results from the current study showed that gender did not predict comfort and expertise with computers and the Internet.

The change in user characteristics, specifically the closing gap between males and females in terms of comfort with computers, may be due to general exposure to computers. The sample population, namely first year undergraduate students may have similar backgrounds and experience with computer use, regardless of gender. Many high school and university courses have required online components and some are entirely distance education with lectures, notes and quizzes held in cyberspace classrooms. This shift in practical uses of the Internet could be forcing younger generations to adapt to computers and the Internet. As computer culture grows and becomes a more pervasive aspect of everyday life, both males and females are becoming more familiar with computers and the Internet.

More frequent use of computers and the Internet for various purposes such as downloading files, chatting, and online banking, predicted higher levels of comfort and expertise with computers and the Internet. The relationship between use and comfort may be related to the notion of practice makes perfect.

Users who report being more comfortable and more knowledgeable with computers may spend more time on the computer doing various tasks. Alternatively, those who do not use the computer as often may experience more "glitches" and technical problems and may be more conscious of their lack of computer knowledge, hence making them more apt to indicate less skill.

While more positive attitudes about sex in general predicted an increased likelihood to search for sexual material online, a negative relationship was found between higher levels of computer and Internet use and an increased likelihood to search for sexually explicit material online. The more experienced and comfortable users reported being with computers and the Internet, the less likely they were to search for sexually explicit online. While these results seem counterintuitive at first glance, it could be that "expert" users or users with more experience with computers are busy engaging in many complex tasks such as installing software, searching for other materials, or building websites, so that less of their computer time appears to be dedicated to searching for sexually explicit material or, indeed they are engaging in too many activities to be searching. In the case of more novice users, searching the Internet for sexual sites and products may be an appealing novelty and so they may be more inclined to search the Internet for sexually related sites and information.

Part 2: Methodology: Paper-and-Pencil Surveys Versus Online Surveys

Examination of the differences between traditional paper-and-pencil and online survey methodologies were conducted to examine the effects of socially

desirable responding, researcher presence, survey length and sensitivity of measure on prevalence of missing items.

In the current study, levels of socially desirable responding were similar for all participants, regardless of the condition that they were assigned to. It appears that regardless of whether the surveys were completed on a computer or by hand had no bearing on the quality of data obtained, as participants were responding similarly across all of the three conditions. These findings are consistent with results from previous studies investigating social desirability across different methodologies. For example, Hancock and Flowers (2001) investigated social desirability in both computerized and paper and pencil surveys, and found no differences in level of socially desirable responses. It is worthy to note that although no differences were found across conditions in terms of social desirability, the obtained reliabilities from both the current sample and the original sample were fairly low. Presence of a floor effect, whereby the majority of scores were near the low end, may have contributed to the lack of differences found in the current study. Another possibility is that the measure used to assess social desirability in the current study was not the most effective measure. In this case, caution is advised when interpreting the lack of socially desirably responding across conditions in the current sample.

In terms of researcher presence, the two online conditions did not show any significant differences in missing items regardless of whether a researcher supervised the session or not. Research conducted by Aquilino and colleagues (2000) examining the effect of bystander presence in research settings, showed

that online data collection moderated the effect of researcher presence. Participants may hold the perception that online data collection is more anonymous and confidential (Baker, 1992). Conceivably, the data is held in a 'cyber world' where responses are far more disconnected or distanced from the individual. Even though in the supervised condition a researcher was present during survey administration, the forum for which data is collected and stored online may have been considered by the participant to be more confidential, and therefore less susceptible to invasion of privacy.

In the present study, when missing responses were examined with all of the separate scales aggregated, there were no significant differences among the three conditions in the number of missing items. Essentially, responding appeared to be as complete in all three conditions including: paper-and-pencil, online supervised (with a researcher present) and online unsupervised (without a researcher present). These findings are consistent with previous studies investigating reliability and quality of data in both paper and pencil and Internet surveys, which have found no differences between the two methodologies (Gosling, Vazire, Srivastava & John, 2004; Knapp & Kirk, 2003).

Although initially it appeared that there was no effect of condition on prevalence of missing items, when the location of the survey within the booklet was examined, a significant interaction of both location and condition emerged. There were significantly more missing items in the paper-and-pencil condition, specifically near the end of the survey, than in the two other online conditions.

While research has highlighted the lack of differences between different methodologies (Gosling, Vazire, Srivastava & John, 2004; Knapp & Kirk, 2003; Pettit, 2002; Truell, Bartlett & Alexander, 2002), when location is taken into consideration, differences in missing items emerge between groups. For longer surveys fatigue and boredom may affect response rates, and contribute to presence of missing items. Consistent with this, research examining survey length as a predictor of non-response rates found that, for the most part, longer surveys had more missing data (Crawford, Couper & Lamias, 2001; Stanton, Sinar, Balzer & Smith, 2002).

It could be that being confined to a laboratory room while filling out a fairly large survey booklet encouraged participants to leave certain items blank. In an attempt to finish in a timely manner it is possible that participants in the paper-and-pencil group in particular skipped more items, especially as the survey progressed.

Considering that exposure to technology and the Internet has grown in leaps and bound, another possibility is that filling out a survey online is more enjoyable than filling out a paper-and-pencil survey. In support of this, Baker (1992) conducted a study that examined enjoyment across the same interview given in both paper-and-pencil and online format. Overall, the computer interview was judged to be shorter, more interesting, more enjoyable and confidential. It is suggested that due to potentially higher levels of enjoyment, for online surveys, in the case of computer administered surveys, people may be less inclined to rush through their responses.

Sensitivity of measures was also examined to see whether the frequency of missing items was higher for surveys measuring more sensitive topics. The results showed that there was a higher occurrence of missing items in the paper-and-pencil condition for the Violence Assessment Index, a survey examining conflict, ranging from mild verbal disagreements to serious physical violence. Johnson and DeLamater (1976) investigated sources of non-sampling error in sex research and found that interview refusal occurred most often in surveys dealing with sensitive topics. It is posited that due to the extra sensitive nature of this scale, participants in the paper-and-pencil condition in particular were less inclined to respond. It is also suggested that because participants were physically handing over their surveys to a researcher, regardless of knowledge that it is confidential and anonymous, the possibility remains that the researcher may have been able to connect the responses to the individual.

Limitations

A potential limitation of the current study was the university student sample. Participants used in the current study may have experienced a more limited range of sexual practices and more homogeneous exposure to technology. To generalize to youth populations, a random selection of community participants (not attending University) would be needed.

Another limitation of the current research was that the study utilized a pre-established survey booklet and thus items for answering the specific questions posed were limited. It could be that some of the failure to identify significant relations were a product of limited measures used to assess sexual risk taking.

In addition, the alpha levels for some of the measures used were low, which introduces the possibility that the measures were assessing something other than the constructs of interest. Perhaps future research could target a broader range of sexual high-risk measures.

Future Directions

Technology is very pervasive in everyday life and the frequency of encountering online materials is bound to increase as computers and the Internet increase in popularity as communication and information resource tools. Awareness of the relationships between people's reactions to sexual online materials and their sexual behaviour is important in order to understand how Internet technology is impacting their everyday lives. Many users are exposed to sexual material online, both voluntarily and involuntarily, and perceptions of these materials will help researchers to understand if there is an interaction between the user and materials encountered online and what reactions/behaviours are likely to follow from exposure, if any.

As society becomes more and more reliant on the Internet as a source of information, the social construction of sexuality may become dependent on information gained over the Internet. By identifying attitudes and behaviours associated with Internet use, we may be able to control and possibly transform the way that online sexual health information is being conveyed so as to offer Internet users reliable, accurate sources of information.

An important future research direction would be to examine the effectiveness of the Internet as a sexual information resource seeking tool. While

much of the information gained over the Internet is easily accessible, free and anonymous, the veracity of the information gained is questionable. How and what students are gaining from Internet websites needs to be explored further. Additional studies might be conducted using different measures, in order to effectively investigate issues such as social desirability and the relation between sexually risky behaviour, perceptions of material found online, and online behaviour.

Computer technology is constantly changing and becoming increasingly more complex. Although programs are designed to be user friendly, email and online and online chat programs (MSN, ICQ) are regularly updated to include more features and functions. What may seem like a simple task often requires in-depth knowledge of computer functions. Therefore, research is needed to identify which additional factors are related to reported comfort and expertise with computers.

Overall, more research is needed to tease apart which aspects affect the reliability and quality of data collected through various methodologies. Length and location of various measures within a survey booklet should be taken into consideration when determining the best, most efficient means for data collection, especially in the case of traditional paper and pencil survey administration. Consideration of these variables is crucial in order to identify the threshold at which participants are producing the most dependable responses. Additionally, lower alpha levels for some of the measures used in the current sample may indicate that there was a lack of performance of certain measures.

In future, investigation of methodological issues such as social desirability may include the use of additional, more reliable measures of socially desirable responding, or the development of brand new social desirability measures.

Studies examining the role of the researcher have yielded mixed findings and thus, this aspect of survey administration also merits further research. Researcher presence can both be a benefit and a detriment to survey administration (Evan & Miller, 1969; Martin & Nagao, 1989; Nosek, Banaji & Greenwald, 2002; Tourangeau, 2004; Tourangeau, Rasinski, Jobe, Smith & Pratt, 1997). It would be beneficial to researchers to develop ways increasing the positive effects and reducing the negative effects that researchers have on participants. Lastly, affective components such as enjoyment and boredom may also play an important role in the quality of responses. In particular, identification of the specific aspects of survey completion that are found to be both enjoyable and monotonous to the participant would help to develop better survey methodologies.

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Table 1.

Cross tabulations of Gender by Condition

Condition	Males *n*	Females *n*	Total N
Paper and Pencil	79	83	162
Online Supervised	83	87	170
Online Unsupervised	70	73	143
Total	232	243	475

Table 2.

Means, Standard Deviations and Alpha Values for Each Dependent Measure

Measure	N	*M*	*SD*	α
Sociosexual Orientation Inventory (SOI)	475	93.76	51	0.78
Self-Report Psychopathy Scale - III - A (SRP - III - A)	475	25.81	5.62	0.75
Describe your Sexuality - Conservative Adjectives	475	37.95	9.77	0.72
Describe your Sexuality - Liberal Adjectives	475	30.54	9.94	0.74
AIDS/HIV Risk Behaviour in Females	475	9.26	0.91	0.55
AIDS/HIV Risk Behaviour in Males	475	9.35	0.87	0.52
Number of Sexual Partners in Females	475	1.49	3.65	na
Number of Sexual Partners in Males	475	2.27	6.28	na
Balanced Inventory of Desirable Responding Impression Management Subscale (IM)	475	0.28	3.51	0.35
Balanced Inventory of Desirable Responding Self-Deceptive Enhancement Subscale (SDE)	475	1.21	4	0.50
Balanced Inventory of Desirable Responding Total (BIDR)	475	1.49	7.32	0.59
Comfort and Expertise with Computers	475	9.55	4.36	0.85
Overall Positive Attitudes Toward Computers	475	15.11	7.92	0.88
Positive Attitudes Toward SEM Pop-ups	475	5.15	3	0.82
Positive Attitudes Toward SEM Inbox Messages	475	5.63	4.2	0.91
Positive Attitudes Toward SEM Junk Mail Messages	475	4.33	2.53	0.85
Overall Negative Attitudes Toward Computers	475	42.66	12.22	0.84
Negative Attitudes Toward SEM Pop-ups	475	15.16	4.1	0.58

Negative Attitudes Toward SEM Inbox Messages	475	14.18	5.17	0.74
Negative Attitudes Toward SEM Junk Mail Messages	475	13.32	5.45	0.76
Likelihood to Search Online SEM	475	17.46	7.54	0.85

Figure Captions

Figure 1. The Theory of Planned Behaviour.

Figure 2. Positive attitudes toward sexually explicit material (pop-ups, inbox messages and junk mail messages) by gender.

Figure 3. Number of missing items as a function of location (beginning seven, middle seven and end seven) and condition (paper and pencil, online supervised and online unsupervised).

Figure 4. Mean number of missing items on the Violence Assessment Index as a function of condition (paper and pencil, online supervised and online unsupervised).

Table 3.

Scale by Scale Pearson Product Moment Correlations for High-Risk Measures

		AIDS and HIV Risk Behaviour	Sociosexual Orientation	Self Reported Psychopathy Scale	Conservative Sexual Attitudes	Liberal Sexual Attitudes	Gender
AIDS and HIV Risk Behaviour	Pearson Correlation	1	-.092(*)	.024	.064	-.040	-.062
Sociosexual Orientation	Pearson Correlation		1	.430(**)	-.463(**)	.525(**)	-.111(*)
Self Reported Psychopathy Scale	Pearson Correlation			1	-.192(**)	.422(**)	-.043
Conservative Sexual Attitudes	Pearson Correlation				1	-.274(**)	.010
Liberal Sexual Attitudes	Pearson Correlation					1	-.108(*)
Gender	Pearson Correlation						1

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.05 level (2-tailed).

Table 4.

Correlations of Affective Variables

		Positive Affect: Pop-ups	Positive Affect: Inbox	Positive Affect: Junk Mail	Negative Affect: Pop-ups	Negative Affect: Inbox	Negative Affect: Junk Mail
Positive Affect: Pop-ups	Pearson Correlation	1	.428(**)	.581(**)	-.352(**)	-.191(**)	-.167(**)
Positive Affect: Inbox	Pearson Correlation			.467(**)	-.174(**)	-.443(**)	-.145(**)
Positive Affect: Junk Mail	Pearson Correlation			1	-.207(**)	-.162(**)	.035
Negative Affect: Pop-ups	Pearson Correlation				1	.603(**)	.540(**)
Negative Affect: Inbox	Pearson Correlation					1	.468(**)
Negative Affect: Junk Mail	Pearson Correlation						1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

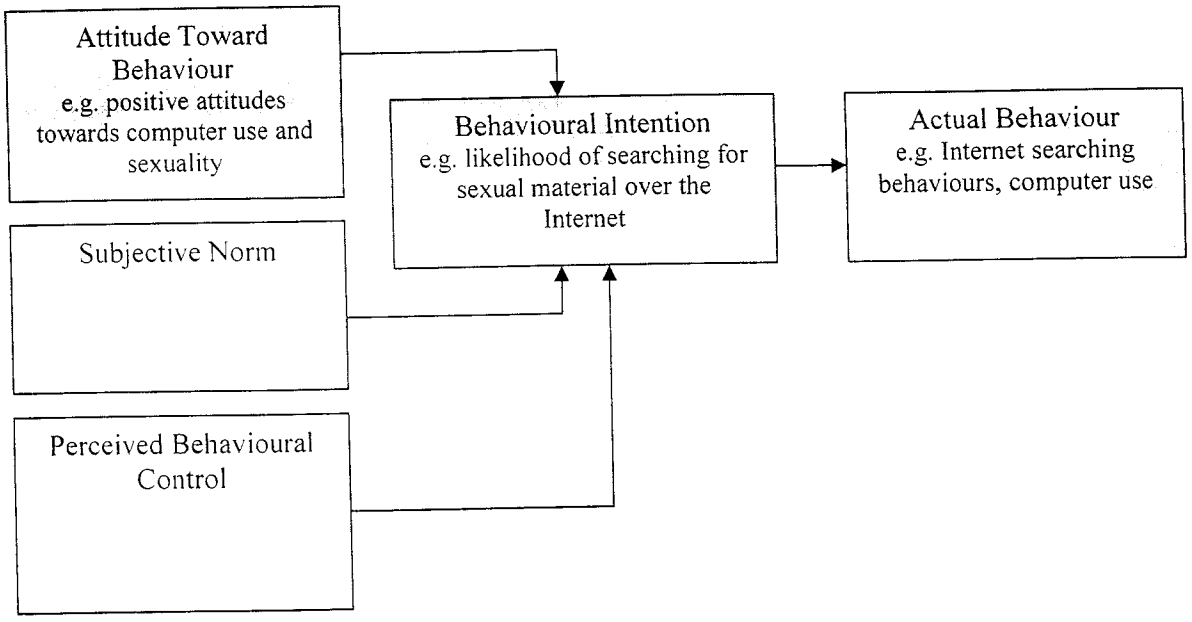
Table 5.

Mean Scores for Males and Females on the Balanced Inventory of Desirable Responding Measure

	Males					Females				
Measure	*n*	*M*	*SD*	min	max	*n*	*M*	*SD*	min	max
Self-Deceptive Enhancement	232	0.12	0.68	0	6	243	0.44	4.86	0	75
Impression Management	232	1.35	1.82	0	12	243	1.07	5.30	0	81
Overall[a]	232	1.46	0.68	0	15	243	1.51	10.06	0	155

[a]Composite of BIDR subscales (SDE and IM)

Figure 1.



The Theory of Planned Behaviour (Ajzen, 1991)

Figure 2.

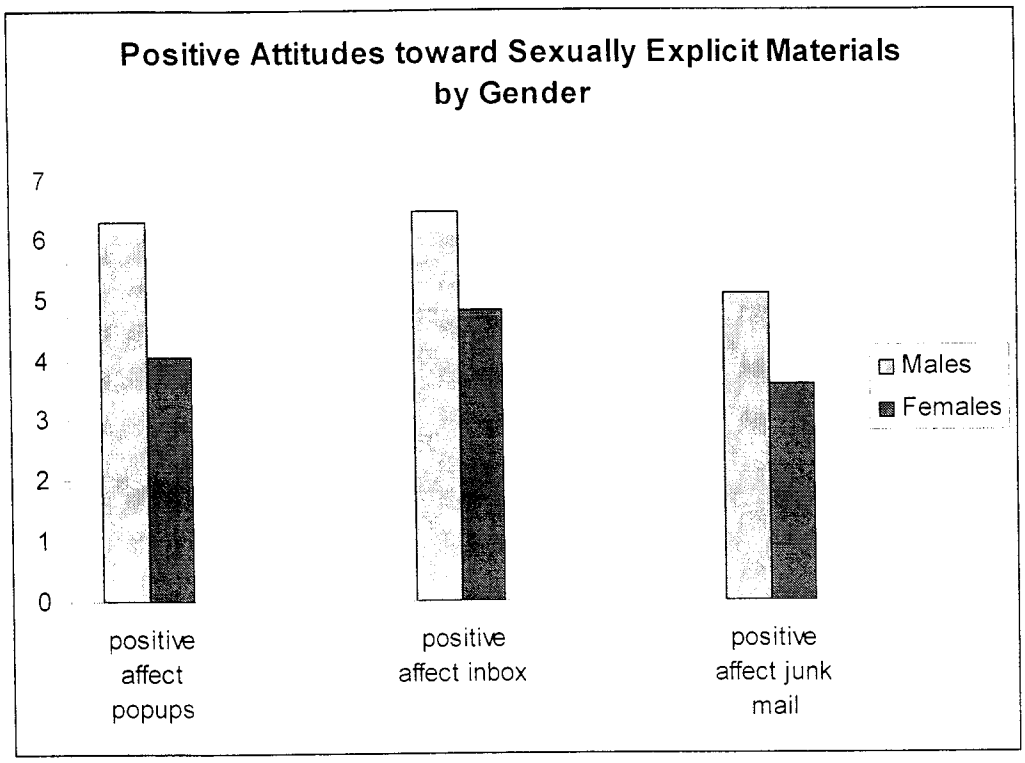

Positive Attitudes toward Sexually Explicit Materials by Gender
7
6
5
4
3
2
1
0
positive affect popups
positive affect inbox
positive affect junk mail
Males
Females

Figure 3.

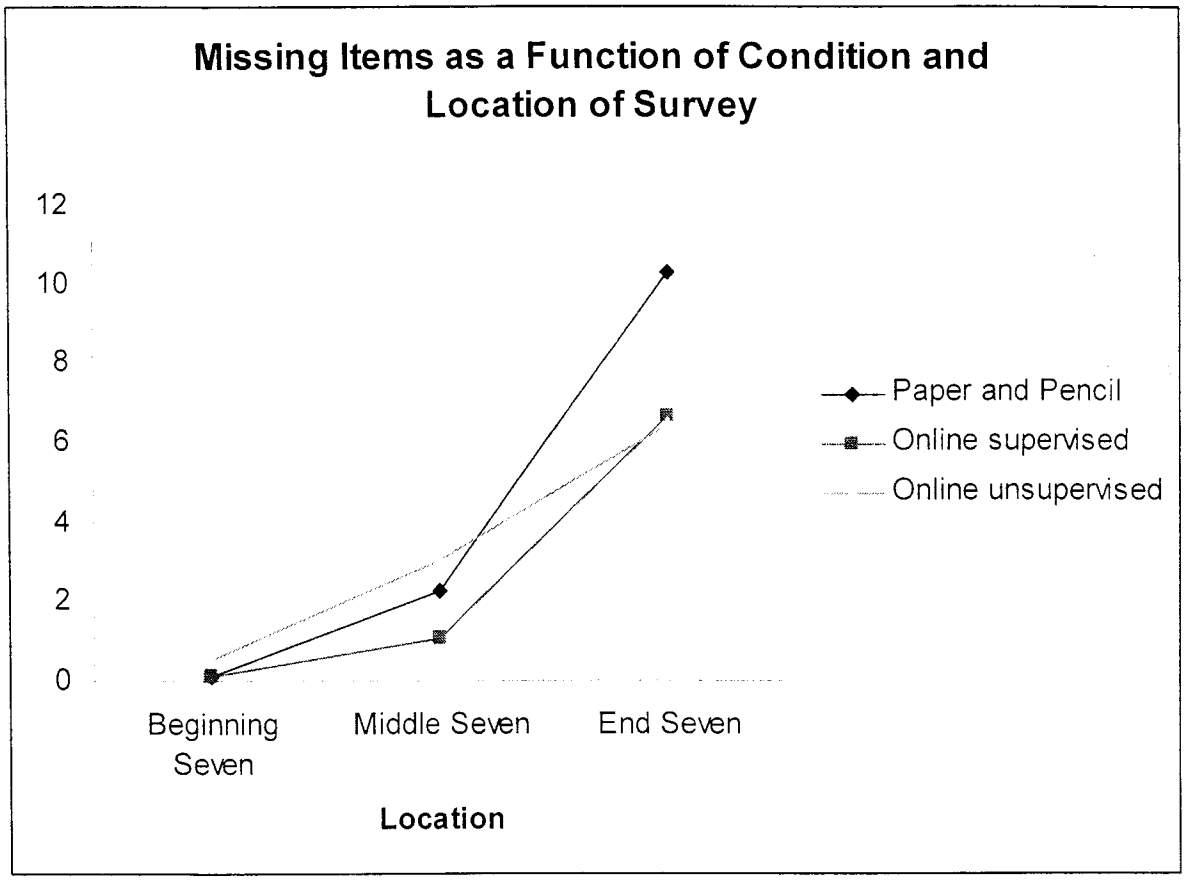
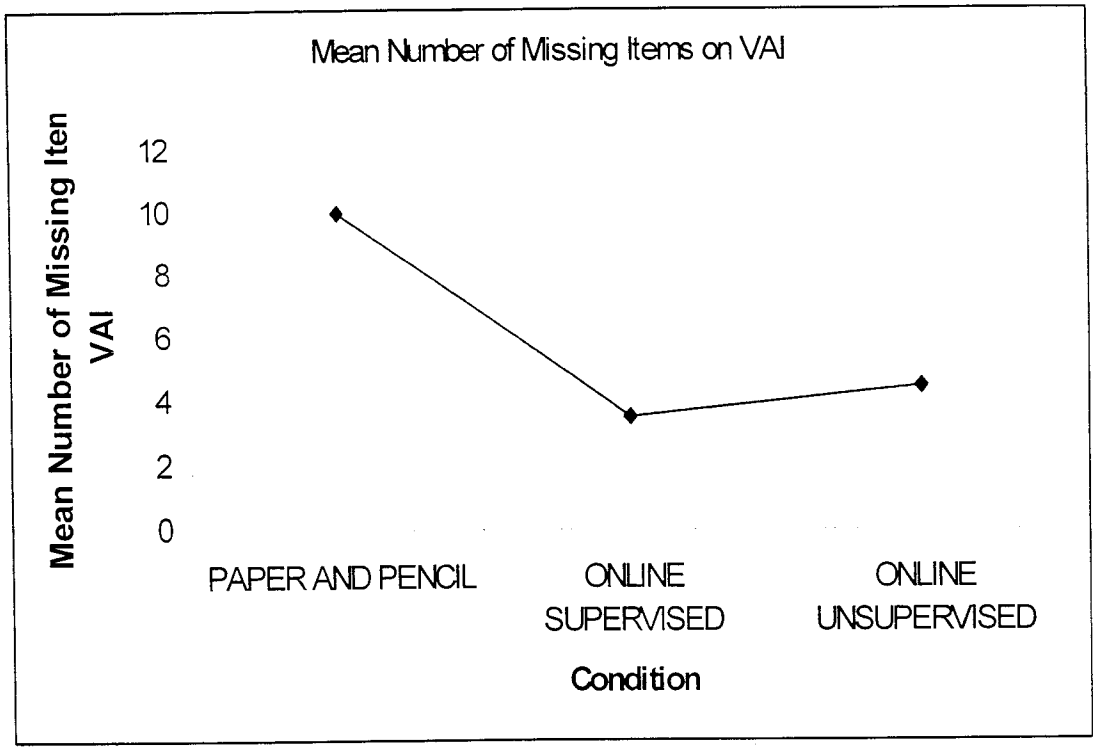

Missing Items as a Function of Condition and Location of Survey
12
10
8
6
4
2
0
Beginning Seven
Middle Seven
End Seven
Location
Paper and Pencil
Online supervised
Online unsupervised

Figure 4.


Mean Number of Missing Items on VAI
Mean Number of Missing Iten VAI
12
10
8
6
4
2
0
PAPER AND PENCIL
ONLINE SUPERVISED
ONLINE UNSUPERVISED
Condition

Appendix A

ID # _____

Computer and Internet Use Survey

Thank you for taking the time to complete this survey. It will take approximately 10 minutes of your time. You will be asked to provide a few demographic details. The survey contains questions about your use of computer for personal use. Of course, there are no right or wrong answers to these questions. Please answer as truthfully and completely as possible. The surveys will be collected, coded and analyzed by researchers at Wilfrid Laurier University in order to ensure complete confidentiality.

I. GENERAL COMPUTER USE

1. In general, how comfortable do you feel about using computers?	Very Comfortable ☐ ☐ ☐ Neutral ☐ ☐ ☐ Very Uncomfortable
2. In general, how enthusiastic are you toward using computers?	Very Enthusiastic ☐ ☐ ☐ Neutral ☐ ☐ ☐ Very Unenthusiastic
3. In general, how knowledgeable are you about using:	Very Knowledgeable ☐ ☐ ☐ Neutral ☐ ☐ ☐ Not at Knowledgeable
a) computer software	☐ ☐ ☐ ☐ ☐ ☐ ☐
b) the Internet	☐ ☐ ☐ ☐ ☐ ☐ ☐
4. On average, how many minutes OR hours **per week** do you use a computer for:	a) Personal use: _____mins. OR _____hrs. per week b) School related use: _____mins. OR _____hrs. per week c) Work use: _____mins. OR _____hrs. per week d) Other _____mins. OR _____hrs. per week e) Internet use (only include time that you are actively engaged, not time when you are not at the computer) _____mins. OR _____hrs. per week
5. Approximately, when did you start using the Internet?	Less than 1 year ago ☐ / 1-4 years ago ☐ / 4-7 years ago ☐ / 7-10 years ago ☐ / More than 10 years ago ☐
6. Approximately how long would a typical session take when you are using the Internet?	Less than 1 hour ☐ / 1-3 hours ☐ / 3-6 hours ☐ / 6-8 hours ☐ / 8 hours or more ☐

7. Approximately how often do you download files from the Internet?	Never	A few times a year	Once a month	A few times a month	Once a week	A few times a week	Daily
	☐	☐	☐	☐	☐	☐	☐

8. How often do you access the Internet in each of the following locations?	Never	A few times a year	Once a month	A few times a month	Once a week	A few times a week	Daily
a) your home	☐	☐	☐	☐	☐	☐	☐
b) parents home	☐	☐	☐	☐	☐	☐	☐
c) relatives home (non-parent)	☐	☐	☐	☐	☐	☐	☐
d) friend's home	☐	☐	☐	☐	☐	☐	☐
e) school	☐	☐	☐	☐	☐	☐	☐
f) public library	☐	☐	☐	☐	☐	☐	☐
g) resource centre	☐	☐	☐	☐	☐	☐	☐
h) coffee shop/bookstore	☐	☐	☐	☐	☐	☐	☐

9. When you are using the Internet in the locations listed below, about what proportion of the time do you feel you have privacy when using the computer?

	Not Applicable	Never			About half the time			Always
a) your home	☐	☐	☐	☐	☐	☐	☐	☐
b) parents home	☐	☐	☐	☐	☐	☐	☐	☐
c) relatives home (non-parent)	☐	☐	☐	☐	☐	☐	☐	☐
d) friend's home	☐	☐	☐	☐	☐	☐	☐	☐
e) school	☐	☐	☐	☐	☐	☐	☐	☐
f) public library	☐	☐	☐	☐	☐	☐	☐	☐
g) resource centre	☐	☐	☐	☐	☐	☐	☐	☐
h) coffee shop/bookstore	☐	☐	☐	☐	☐	☐	☐	☐

10. When you have access to the Internet, what is the most common type of Internet connection that you are using? (select one)	Dial-up ☐ Highspeed (e.g.cable) ☐ Wireless ☐
11. Approximately what proportion of your friends use the Internet? (select one)	All ☐ Almost All ☐ Most ☐ Some ☐ A few ☐ Almost None ☐ None ☐

12. Would you say you use the Internet _____ compared to your friends?

Almost Never	Much Less Often	Less Often	About the Same	More Often	Much More Often	Way More Often
☐	☐	☐	☐	☐	☐	☐

13. In the last 6 months, how often do you use the Internet for the following:

	Never	A few times a year	Once a month	A few times a month	Once a week	A few times a week	Daily
1. Communication (online only)							
i. Email	☐	☐	☐	☐	☐	☐	☐
ii. Chat rooms	☐	☐	☐	☐	☐	☐	☐
iii. Instant messaging	☐	☐	☐	☐	☐	☐	☐
iv. Online dating	☐	☐	☐	☐	☐	☐	☐
2. Entertainment (online only)							
i. Games	☐	☐	☐	☐	☐	☐	☐
ii. Music/Movies	☐	☐	☐	☐	☐	☐	☐
iii. Other _____	☐	☐	☐	☐	☐	☐	☐
3. Personal Financing (e.g., banking)	☐	☐	☐	☐	☐	☐	☐
4. Shopping (e.g., ebay)	☐	☐	☐	☐	☐	☐	☐
5. Study							
i. Online courses	☐	☐	☐	☐	☐	☐	☐
ii. Research	☐	☐	☐	☐	☐	☐	☐
6. General Information	☐	☐	☐	☐	☐	☐	☐

II. INTERNET USE

14. When using the Internet, how often do you receive pop-ups?	None ☐	Less than 1 per day ☐	1 per day ☐	2-3 per day ☐	4-5 per day ☐	6-7 per day ☐	8 or more per day ☐
15. On average, how many pop-ups do you receive in a week?	None ☐	Less than 1 per day ☐	1 per day ☐	2-3 per day ☐	4-5 per day ☐	6-7 per day ☐	8 or more per day ☐
16. How often do these pop-ups contain sexually explicit material?	Never ☐	Less than 1 per day ☐	1 per day ☐	2-3 per day ☐	4-5 per day ☐	6-7 per day ☐	8 or more per day ☐

17. How often do you receive unsolicited email in your:

	Never	Less than 1 per day	1 per day	2-3 per day	4-5 per day	6-7 per day	8 or more per day
a) **inbox?**	☐	☐	☐	☐	☐	☐	☐
b) **junk mail?** (answer this if your mail is separated)	☐	☐	☐	☐	☐	☐	☐

18. On average, how many unsolicited emails do you receive in your **inbox** each week?	None ☐	Less than per day ☐	1 per day ☐	2-3 per day ☐	4-5 per day ☐	6-7 per day ☐	8 or more per day ☐
19. How often do the **inbox** unsolicited emails contain sexually explicit material?	Never ☐	Less than 1 per day ☐	1 per day ☐	2-3 per day ☐	4-5 per day ☐	6-7 per day ☐	8 or more per day ☐
20. On average, how many unsolicited emails do you receive in your **junk mail** each week? (answer this is your mail is separated)	None ☐	Less than per day ☐	1 per day ☐	2-3 per day ☐	4-5 per day ☐	6-7 per day ☐	8 or more per day ☐

21. How often do the **junk mail** unsolicited emails contain sexually explicit material? (answer this is your mail is separated)	Never	Less than per day	1 per day	2-3 per day	4-5 per day	6-7 per day	8 or more per day
	☐	☐	☐	☐	☐	☐	☐

22. We would like you to tell us how true the following feelings are for you when you receive unsolicited sexually explicit:

i) pop-ups?	**Never true of me**			**Somewhat true of me**			**Absolutely true of me**
a) feel indifferent	☐	☐	☐	☐	☐	☐	☐
b) find it enjoyable	☐	☐	☐	☐	☐	☐	☐
c) find it interesting	☐	☐	☐	☐	☐	☐	☐
d) find it to be a nuisance	☐	☐	☐	☐	☐	☐	☐
e) find it offensive	☐	☐	☐	☐	☐	☐	☐
f) find it desirable	☐	☐	☐	☐	☐	☐	☐
g) find it frustrating	☐	☐	☐	☐	☐	☐	☐
ii) inbox messages?							
a) feel indifferent	☐	☐	☐	☐	☐	☐	☐
b) find it enjoyable	☐	☐	☐	☐	☐	☐	☐
c) find it interesting	☐	☐	☐	☐	☐	☐	☐
d) find it to be a nuisance	☐	☐	☐	☐	☐	☐	☐
e) find it offensive	☐	☐	☐	☐	☐	☐	☐
f) find it desirable	☐	☐	☐	☐	☐	☐	☐
g) find it frustrating	☐	☐	☐	☐	☐	☐	☐
iii) junk mail messages? (answer if your mail is separated)							
a) feel indifferent	☐	☐	☐	☐	☐	☐	☐
b) find it enjoyable	☐	☐	☐	☐	☐	☐	☐
c) find it interesting	☐	☐	☐	☐	☐	☐	☐
d) find it to be a nuisance	☐	☐	☐	☐	☐	☐	☐
e) find it offensive	☐	☐	☐	☐	☐	☐	☐
f) find it desirable	☐	☐	☐	☐	☐	☐	☐
g) find it frustrating	☐	☐	☐	☐	☐	☐	☐

23. How often do you solicit or seek out Internet information that is sexually explicit?	Never			Sometimes			Always
	☐	☐	☐	☐	☐	☐	☐

24. How often do you solicit or seek out contacts that would result in you receiving sexually explicit emails?	Never			Sometimes			Always
	☐	☐	☐	☐	☐	☐	☐

25. How likely are you to explore a sexually explicit pop-up site?	Not at all likely ☐ ☐ ☐ Somewhat likely ☐ ☐ ☐ Definitely likely
26. How likely are you to explore a sexually explicit unsolicited email?	Not at all likely ☐ ☐ ☐ Somewhat likely ☐ ☐ ☐ Definitely likely
27. How curious are you about the sexually explicit pop-ups you receive?	Never curious ☐ ☐ ☐ Sometimes ☐ ☐ ☐ Always curious
28. How curious are you about the sexually explicit unsolicited emails you receive?	Never curious ☐ ☐ ☐ Sometimes ☐ ☐ ☐ Always curious
29. How often have you accidentally accessed sexually explicit material on the Internet?	Never ☐ ☐ ☐ Sometimes ☐ ☐ ☐ Always
30. How often have you intentionally accessed sexually explicit material on the Internet?	Never ☐ ☐ ☐ Sometimes ☐ ☐ ☐ Always

31. Have you tried to do anything to reduce pop-ups?	**Yes** _____	**No** _____
32. Have you tried to do anything to reduce unsolicited emails?	**Yes** _____	**No** _____

33. Has receiving sexually explicit unsolicited emails made you more likely to search sex-related sites?	**Yes** _____ **No** _____

34. Has receiving sexually explicit pop-ups made you more likely to search sex-related sites?	**Yes** _____ **No** _____

35. How often have you purchased pornographic materials:

	Never			Sometimes			Always
a) at the convenience or general store	☐	☐	☐	☐	☐	☐	☐
b) at an adult only store	☐	☐	☐	☐	☐	☐	☐
c) through the Internet (mailed to your home)	☐	☐	☐	☐	☐	☐	☐
d) on the Internet (online access only)	☐	☐	☐	☐	☐	☐	☐

THE END

Thank-you for your time and participation.

Appendix B

The Confidential "Personality and Sexual Attitudes" Survey

Personal Information and Family History

Sex (circle one): Male Female Age (in years):
Height (in feet & inches): Weight (in pounds): ft inches
Sexual Orientation (circle one): Heterosexual Homosexual Bisexual
Current Relationship Status (check all that apply):

Married (if so, how long? - years)	Engaged
Cohabiting/Living with Someone	Divorced
Widowed	Dating Multiple Persons
Dating One Person Exclusively	Not Currently Involved with Anyone
Have Never Had a Sexual Relationship	

In what socio-economic bracket were you raised for most of your life (circle one)?
Upper Class Upper-Middle Class Middle Class Lower-Middle Class

What is your current socio-economic bracket (circle one)?
Upper Class Upper-Middle Class Middle Class Lower Class Lower-Middle Class
Lower Class

In what type of area were you raised for most of your life (circle one)?
Rural Urban Suburban

In what type of area are you currently living (circle one)? Rural Urban Suburban

Total number of years of formal education (including grade school)? Years

What is your current religious affiliation (circle one)?
Protestant Catholic Jewish Muslim Buddhist None Other

Are you (circle one)?
Not at all Religious 1 2 3 4 5 6 7 Extremely Religious
Moderately

How would you describe your ethnic background (circle all that apply)?
Black Asian European Hispanic Native Other

Which is your dominant or preferred hand (circle one)?
Right-Handed Left-Handed Ambidextrous

How many children, if any, do you have? How many are adopted or are step-children?
How many of your children are sons? How many of your children are daughters?
How many older brothers do you have? How many older sisters do you have?
How many younger brothers do you have? How many younger sisters do you have?
Are you a twin or triplet (circle one)? Yes No

Do you have any stepsiblings, adoptive siblings, or half-siblings? Yes No

Appendix C

BIDR Version 6 **-Form 40A**

Instructions: Using the scale below as a guide, write a number beside each statement to indicate how true it is.

1	2	3	4	5	6	7
not true			somewhat true			very true

1.My first impressions of people usually turn out to be right.
2. It would be hard for me to break any of my bad habits.
3. I don't care to know what other people really think of me.
4. I have not always been honest with myself.
5. I always know why I like things.
6. When my emotions are aroused, it biases my thinking.
7. Once I've made up my mind, other people can seldom change my opinion.
8. I am not a safe driver when I exceed the speed limit.
9. I am fully in control of my own fate.
10. It's hard for me to shut off a disturbing thought.
11. I never regret my decisions.
12. I sometimes lose out on things because I can't make up my mind soon enough.
13. The reason I vote is because my vote can make a difference.
14.My parents were not always fair when they punished me.
15. I am a completely rational person.
16. I rarely appreciate criticism.
17. I am very confident of my judgments
18. I have sometimes doubted my ability as a lover.
19. It's all right with me if some people happen to dislike me.
20. I don't always know the reasons why I do the things I do.
21. I sometimes tell lies if I have to.
22. I never cover up my mistakes.
23. There have been occasions when I have taken advantage of someone.
24. I never swear.
25. I sometimes try to get even rather than forgive and forget.
26. I always obey laws, even if I'm unlikely to get caught.
27. I have said something bad about a friend behind his/her back.
28. When I hear people talking privately, I avoid listening.
29. I have received too much change from a salesperson without telling him or her.
30. I always declare everything at customs.
31. When I was young I sometimes stole things.
32. I have never dropped litter on the street.
33. I sometimes drive faster than the speed limit.
34. I never read sexy books or magazines.
35. I have done things that I don't tell other people about.
36. I never take things that don't belong to me.
37. I have taken sick-leave from work or school even though I wasn't really sick.
38. I have never damaged a library book or store merchandise without reporting it.
39. I have some pretty awful habits.
40. I don't gossip about other people's business.

Appendix D

Sociosexual Orientation Inventory (SOI)

Please answer all of the following questions honestly. For the questions dealing with behavior, *write* your answers in the blank spaces provided. For the questions dealing with thoughts and attitudes, *circle* the appropriate number on the scales provided.

1. With how many different partners have you had sex (sexual intercourse) within the past year?

2. How many different partners do you foresee yourself having sex with during the next five years (Please give a *specific, realistic* estimate)?

3. With how many partners have you had sex on *one and only one* occasion?

4. How often do you fantasize about having sex with someone other than your current (or most recent) dating partner (Circle one)?

1. Never
2. Once every two or three months
3. Once a month
4. Once every two weeks
5. Once a week
6. A few times a week
7. Nearly every day
8. At least once a day

5. Sex without love is OK.

1	2	3	4	5	6	7	8	9
I strongly disagree								I strongly agree

6. I can imagine myself being comfortable and enjoying "casual" sex with different partners.

1	2	3	4	5	6	7	8	9
I strongly disagree								I strongly agree

7. I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him or her.

1	2	3	4	5	6	7	8	9
I strongly disagree								I strongly agree

Appendix E
HIV /AIDS Risk Behavior Form

1)Have you ever had sex (including oral, anal, or vaginal sex) with a man (circle one)?
Yes No
If yes, have you had sex with a man in the past 30 days? Yes No
If yes, have you had sex with a man in the last 24 hours? Yes No
2) Have you ever had unprotected sex with a man (Le., without using condoms)?
Yes No
If yes, have you had unprotected sex with a man in the past 30 days?
Yes No
If yes, have you had unprotected sex with a man in the last 24 hours?
Yes No
3) Have you ever had sex (including oral, anal, or vaginal sex) with a woman?
Yes No
If yes, have you had sex with a woman in the past 30 days?
Yes No
If yes, have you had sex with a woman in the last 24 hours?
Yes No
4) Have you ever had unprotected sex with a woman (Le., without using condoms)?
Yes No
If yes, have you had unprotected sex with a woman in the past 30 days?
Yes No
If yes, have you had unprotected sex with a woman in the last 24 hours?
Yes No
5) Have you ever had sex with someone who used to or is currently injecting drugs?
Yes No
If yes, have you done so in the last 30 days?
Yes No
If yes, have you done so in the last 24 hours?
Yes No
6) Have you ever had sex in exchange for money, drugs, a place to stay, or basic needs? Yes No
If yes, have you done so in the last 30 days?
Yes No
If yes, have you done so in the last 24 hours?
Yes No
7) Have you ever had sex with someone you knew had tested positive for HIV?
Yes No
If yes, have you done so in the last 30 days?
Yes No
If yes, have you done so in the last 24 hours?
Yes No
8) Have you ever had a sexually transmitted disease (such as gonorrhea, chlamydia, syphilis, herpes, etc., not including HIV)?
Yes No
If yes, have you had the disease in the last 30 days?
Yes No
If yes, have you had the disease in the last 24 hours?
Yes No

9) Have you ever used a drug by injecting intravenously or skin popping (intramuscular)?
Yes No
If yes, have you done so in the last 30 days?
Yes No
If yes, have you done so in the last 24 hours?
Yes No
10) Have you ever shared injection needles with others?
Yes No
If yes, have you done so in the last 30 days?
Yes No
If yes, have you done so in the last 24 hours?
Yes No
II) Have you ever received a blood transfusion?
Yes No
If yes, have you done so in the last 30 days?
Yes No
If yes, have you done so in the last 24 hours?
Yes No
12) Have you ever smoked a half pack or more of cigarettes a day?
Yes No
If yes, have you done so in the last 30 days?
Yes No
If yes, have you done so in the last 24 hours?
Yes No
13) Have you or those close to you ever thought you had an alcohol problem?
Yes No
If yes, have you or those close to you thought so in the last 30 days?
Yes No
If yes, have you or those close to you thought so in the last 24 hours?
Yes No
14) Have you ever used heroin (china white, smack)?
Yes No
If yes, have you done so in the last 30 days?
Yes No
If yes, have you done so in the last 24 hours?
Yes No
15) Have you ever used crack cocaine (rock)?
Yes No
If yes, have you done so in the last 30 days?
Yes No
If yes, have you done so in the last 24 hours?
Yes No
16) Have you ever used other drugs (powder cocaine, speed, PCP, hallucinogens, etc.)?
Yes No
If yes, have you done so in the last 30 days?
Yes No
If yes, have you done so in the last 24 hours?
Yes No

17) Have you ever been involved with any aspect of the criminal justice system (including arrests, convictions, incarcerations, probation, etc.)?
Yes No
If yes, have you been involved in the last 30 days?
Yes No
If yes, have you been involved in the last 24 hours?
Yes No
18) With how many men have you *ever* had sex (including oral, anal, and/or vaginal sex)?
Yes No
19) With how many women have you *ever* had sex (including oral, anal, and/or vaginal sex)? Yes No

20) Please check below if you have or have had any of the following:

o AIDS
o Anemia
o Arthritis
o Asthma
o Back Problems
o Blood Disease
o Cancer
o Chemical Dependency
o Chemotherapy
o Circulatory Problems
o Colds, more than 2/year
o Cough, Persistent
o Cough Up Blood
o Diabetes
o Epilepsy
o Fainting
o Flu, more than 2/year
o Glaucoma
o Headaches
o Heart Murmur
o Hemophilia
o Hepatitis
o High Blood Pressure
o HIV Positive
o Jaw Pain
o Kidney Disease
o Liver Disease
o Nervous Problems
o Pacemaker
o Psychiatric Care
o Radiation Treatment
o Respiratory Disease
o Rheumatic Fever
o Scarlet Fever
o Shortness of Breath
o SkinRash

o Stroke
o Swelling of Feet/Ankle
o Thyroid Problems
o Tobacco Habit
o Tonsillitis
o Tuberculosis
o Ulcer
o Venereal Disease

21) Thinking back over the past year, on any occasion were you hit, slapped, kicked, raped, or otherwise physically hurt by someone you know or knew intimately, such as a spouse, partner, ex-spouse or ex-partner, boyfriend, girlfriend, or date (circle one)?

Yes No

22) Considering your current partner or friends, or any past partners or friends, is there anyone that is making you feel
unsafe now (circle one)?

Yes No

23) In the past year, have the police ever been called to your home because of a fight or argument, no matter who was fighting or who was at fault (circle one)?

Yes No

This completes the Anonymous "Personality and Sexual Attitudes" Study.
Thank you once again for your participation in this important project.

Appendix F

HOW ACCURATELY CAN YOU DESCRIBE YOUR SEXUALITY?

Please rate how accurately each of the following adjectives describes yourself. Describe yourself as you are at the present time, not as you wish to be in the future. Describe yourself as you are generally or typically, as compared with other persons you know of the same sex and of roughly your same age.
So that you can describe yourself in a completely honest manner, your responses will be completely anonymous.

After each adjective, please write a number indicating how accurately that word describes you, using the following
scale:

Inaccurate
Accurate
1 2 3 4 5 6 7 8 9

Abstinent
Adorable
Adulterous
Affectionate
Alluring
Amorous
Arousing
Asexual
Attractive
Bisexual
Celibate
Charming
Chaste
Compassionate
Coy
Crude
Cuddlesome
Devoted
Effeminate
Erotic
Faithful
Feminine
Flirtatious
Gentlemanly
Hard-to-get
Heterosexual
Homosexual
Horny
Immodest
Indecent
Indiscreet
Jealous
Kinky
Ladylike
Lewd
Loose
Lovable
Loving
Lustful
Manly
Marriable
Masculine
Monogamous
Nymphomaniacal
Obscene
Orgasmic
Orgiastic
Passionate
Perverted
Polygamous
Promiscuous
Provocative
Prudish
Risque
Romantic
Seductive
Sensual
Sexual
Sexy
Shameless
Stunning
Suggestive
Sultry
Unfaithful
Virginal
Vulgar
Womanly

Appendix G

The SRP-III-A Survey

Instructions: Listed below is a series of statements. Please write a letter next to each statement to indicate the extent to which you disagree or agree with that statement.

A strongly Disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

1. I enjoy driving at high speed.
2. I think I could "beat" a lie detector.
3. I like to change jobs fairly often.
4. I am usually very careful about what I say to people.
5. I have often done something dangerous just for the thrill of it.
6. I get a kick out of "conning" someone.
7. I get in trouble for the same things time after time.
8. I am very good at most things I try to do.
9. I enjoy taking chances.
10. Rules are made to be broken.
11. Not hurting others' feelings is important to me.
12. I would be good at a dangerous job because I like making fast decisions.
13. I have sometimes broken an appointment because something more interesting came along.
14. I enjoy gambling for large stakes.
15. I almost never feel guilty over something I've done.
16. It's sometimes fun to see how far you can push someone before they catch on.
17. People can usually tell if I am lying.
18. Conning people gives me the "shakes" (Le., I become nervous and jittery).
19. When I do something wrong, I feel guilty even though nobody else knows it.
20. I enjoy drinking and doing wild things.
21. I am the most important person in this world and nobody else matters.
22. I have had (or tried to have) sexual relations with someone against their will.
23. I have avoided paying for things, such as movies, bus or subway rides, and food.
24. I have cheated on school tests.
25. I have been arrested.
26. I have handed in a school essay that I copied from someone else.
27. I have shoplifted.
28. I have been involved in gang activity.
29. I have stolen (or tried to steal) a motor vehicle, such as a car or motorcycle.
30. I have broken into a building or vehicle (or tried to break in) to steal something or just to look around.
31. I have attacked someone with the idea of seriously hurting him or her.

Appendix H

Scoring

The Computer and Internet Use Survey. A "Comfort and Expertise" measure was constructed. Four items were aggregated to create an overall comfort/expertise score. These included questions which asked participants how knowledgeable they felt they were about computers and how comfortable they felt with using computers and the Internet (items 1, 2, 3a and 3b). For the specific items, see Appendix K.

For "Affect toward Unsolicited Sexually Explicit Materials", two composite scores were created, one for positive affect and one for negative affect. In addition, each positive and negative affect score was categorized by the type of unsolicited sexually explicit material (pop-ups, inbox messages or junk mail messages).

A score was calculated to assess positive affect toward sexually explicit pop-ups, with items asking participants who they felt when encountering unsolicited sexually explicit pop-ups (items 22ib, 22ic and 22if). For positive affect toward sexually explicit inbox messages, items asked participants who they felt when encountering unsolicited sexually explicit inbox messages (items 22iib, 22iic and 22iif). Finally, positive affect toward sexually explicit junk mail messages was assessed (items 22iiib, 22iiic and 22iiif).

A score was calculated to assess negative affect toward sexually explicit pop-ups. Similarly to the positive affect score, participants were asked how negatively they felt when encountering unsolicited pop-ups (items 22id, 22ie and

22ig). To assess negative affect toward sexually explicit inbox messages, three items were aggregated (items 22iid, 22iie and 22iig). Lastly, negative affect toward sexually explicit junk mail messages was assessed (items 22iiid, 22iiie and 22iiig). Higher scores on each of the scales indicated stronger feelings (positive or negative) toward the specific type of sexually explicit online material. For specific items, see Appendix L.

For "Likelihood to Search for Sexually Explicit Materials Online" an aggregate score was created to assess overall likelihood to search for sexual materials online (items 23, 24, 25, 26, 27, 28, 30, 35a, 35b, 35c and 35d). A higher score indicated a higher likelihood of exploring online sexual material. For specific items, see Appendix M.

BIDR. Paulhus (1990) recommended that for the 7-point Likert scale version of the BIDR, following reverse scoring of negatively keyed items, a point was awarded for every response of '6' or '7'. For every other possible response, no point was awarded (1, 2, 3, 4 or 5). Higher scores indicated more socially desirable responses. For the self-deceptive enhancement scale (SDE) which refers to items 1 through 20, the following items were reversed scored: 2, 4, 6, 8, 10, 12, 14, 16, 18 and 20. For the impression management scale (IM) which refers to items 21 through 40, the following items were reversed scored: 21, 23, 25, 27, 29, 31, 33, 35, 37 and 39. By following this scoring rubric a total score of 20 for the SDE subscale and 19 for the IM subscale, with a possible overall score of 40 for the entire measure.

Sociosexual Orientation Inventory (SOI). As described in Simpson and Gangestad's article (1991), item number 7 was reverse scored. A sum of items 5 through 7 was calculated, and item number 2 was truncated at 30. A weighted sum was formulated using the following equation: 5 * Q1 + Q2 + 5 * Q3 + 4 * Q4 + 5 * (sum [Q5-Q7]). A higher overall score indicated a less restricted orientation toward engaging in uncommitted sex.

AIDS/HIV Risk Behaviour Form. Items pertaining to sexual risk behaviours were identified. The following items were aggregated to make a composite risk behaviour score for both males and females. The items pertaining to males included items number 3, 4, 6, 7 and 8. The items pertaining to females included items number 1,2,6,7 and 8. Scores indicating a response of 'yes' were assigned a value of 1, and those scores indicating a response of 'no' were assigned a value of 2. Therefore, the lower the overall score indicated a higher level of sexual risk behaviour. For both males and females the number of sexual partners was used as an indicator of sexual risk. The higher the number of sexual partners, the more promiscuous the individual, and thus these individuals were deemed more sexually risky.

"How Accurately Can You Describe Your Sexuality?". Following the factor analysis provided by Schmitt and Buss (2000), three predetermined factors (Sexual Restraint, Erotophilic Disposition and Relationship Exclusivity) were identified as containing adjectives that were either considered to be sexually conservative or sexually liberal. Within the construct of Sexual Restraint five adjectives (abstinent, celibate, chaste, prudish and virginal) were chosen to

represent sexual conservatism. Along with these adjectives, the construct of Relationship Exclusivity contained three adjectives considered to be sexually conservative in nature (devoted, faithful and monogamous). A composite 'sexually conservative' score was calculated by summing up the responses to the eight chosen adjectives.

Within the construct of Erotophilic Disposition five adjectives (horny, kinky obscene, perverted and shameless) were chosen to represent sexual liberalism. Relationship Exclusivity also contained three adjectives (adulterous, loose and promiscuous) reflecting sexually liberal views. A composite 'sexually liberal' score was calculated by summing up the responses to the eight chosen adjectives. Higher scores on either of the sexually conservative or liberal composite scales indicated higher endorsement of that attitude toward sexuality.

The Self Report Psychopathy Scale – III. As described by Paulhus, Hemphill & Hare (in press) four constructs associated with psychopathy were identified. These constructs include Antisocial Behaviour, Interpersonal Manipulation, Cold Affect, and Impulsive Thrill Seeking. For the purpose of this investigation, only the Impulsive Thrill Seeking subscale was used. According the a confirmatory factor analysis as set out by the authors, items 1, 3, 5, 9, 10, 12, 13, 14 and 20 fell under the subscale of interest and were summed to create an overall composite thrill seeking score.

Appendix I

Informed Consent Letter For study entitled: **Computer Technology and the Sexual Attitudes Survey**

Dear Participant,

As part of the ongoing research at Wilfrid Laurier University, we are investigating two issues. One examines sexual attitudes, behaviours and experiences, and the other looks at uses of, and experiences with computer technology. This research is part of an international study being conducted by 100 researchers throughout the world. Together, the data collected will give a snapshot of current attitudes, behaviours and experiences of students in different cultures and countries. We are asking approximately 500 Introductory Psychology students to participate in this survey- based study. The research is being conducted by Dr. Eileen Wood, Amanda Nosko (Master's student), Jennifer Caron (Honour's Student), and Meghan Bellamy (Honour's Student) of the Psychology department at Wilfrid Laurier University.

Our study involves completing two surveys. One survey will ask questions about computer use, emails and Internet use, and responses to materials that are received when using emails or searching the Internet. The other survey contains a series of measures that will ask you questions about personality, sexual attitudes, sexual behaviours, sexual assault, health related issues, and AIDS/HIV knowledge. Each survey includes demographic information age, gender, religion etc.) which we will use to understand more about the sample that participated in the study. The two surveys will take approximately one hour to complete. You will receive one credit for the one hour that you will participate.

All the information in the surveys is completely anonymous. That means that no one would ever be able to match your responses to you. Responses on the surveys will be converted into an electronic file which will only be accessed by researchers involved with this project and the coordinator for the international research project. The data will be seen in an anonymous format by the 100 researchers involved in this project and each researcher will assess exactly the same things in similar samples. The data collected will be stored in a locked research room at Wilfrid Laurier University and will be destroyed five years after the research is published. The only risk of participating in this study is that you may feel uncomfortable answering some questions due to their sensitive or personal nature. You may omit any question or you may withdraw from the study at any time without penalty. The benefit of participating in this study is that the results will further the knowledge of the research community and help to better understand issues related to sexuality and issues related to computer use. Furthermore, you will have the opportunity to learn about the scientific process, and to learn what it is like to participate in psychological research. The results from this study will eventually be published in scholarly journals and presented at academic research conferences.

Participation in this study is voluntary, and you are free to withdraw your participation at any time without any penalty. Should you choose to withdraw participation, your data will be destroyed and will not be included in the final analysis. The psychology department offers an alternative means of gaining credit should you not wish to participate in research. You can choose instead to complete a review of a journal article. For information about this option, please contact the Psychology department.

We would like to share our findings with you. Upon completion of the research you will find a summary of the research findings posted on the research board across from the Psychology department main office. You can locate the summary for the present study using the following research number and title. Number: 1919 Title: Computer technology and the sexual attitudes survey. Results should be posted by March 30, 2005.

We hope that you will be willing to participate in this research project and we look forward to sharing our findings upon completion. At this time we would like to thank you for taking the time to consider our request for participation. We have attached a consent form for you to let us know whether you would be willing to participate in our study. This project has been reviewed and approved by the University Research Ethics Board. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Bill Marr, Chair, University Research Ethics Board, Wilfrid Laurier University, (519) 884-0710, extension 2468.

If you have any further questions regarding this study please feel free to contact the researchers, Eileen Wood at Wilfrid Laurier University (884-1970 ext.3738); or Amanda Nosko (nosk2123@wlu.ca).

Thank you again for considering our study.

Eileen Wood, Ph.D. Amanda Nosko

Meghan Bellamy Jennifer Caron

Appendix J

Feedback Letter

Dear *Participant,*

We would like to thank you for your participation in this study. The purpose of this study was to identify the predictors of responses to sexual material received through email and the Internet. Specifically, we wanted to identify whether or not sexual attitudes would impact reactions to sexually explicit pop-ups and unsolicited emails. Furthermore, various issues related to sexuality were measured, including sexual assault and violence. We want to stress that as researchers we do not endorse or support such activities, and have provided a list of contacts should you feel the need to address any concerns.

The data collected from the surveys you completed will contribute to a better understanding of the factors influencing how people respond to sexual material, and more specifically, how people respond to sexual material over the Internet. Due to the lack of empirical data on issues related to Internet use, the results from this study will be a valuable addition to the growing field of research on sexuality and the Internet.

Please remember that all of the data are anonymous. Once all the data are collected and analyzed for this project, we plan on sharing this information with the research community through seminars, conferences, presentations, and journal articles. If you have any questions or concerns about this study, please contact Eileen Wood at Wilfrid Laurier University (884-1970 ext.3738); or Amanda Nosko (nosk2123@wlu.ca). If you would like a summary of the results, please feel free to look up the results on the bulletin board outside of the Psychology office at Wilfrid Laurier University. The results are expected to be available by March 30, 2005. As with all Wilfrid Laurier University projects involving human participants, this project was reviewed by, and received ethics clearance through, the Office of Research Ethics at Wilfrid Laurier University. Should you have any comments or concerns resulting from your participation in this study, please contact Dr. Bill Marr in the Research Office (884-1970 ext. 2468).

Eileen Wood Ph.D. Amanda Nosko
Wilfrid Laurier University, Psychology

Related Research References:

Goodson, P., McCormick, D., & Evans, A. (2000). Sex and the Internet: A survey instrument to assess college students' behaviour and attitudes. *Cyberpsychology & Behaviour, 3*(2), 129-140.

Boies, S.C. (2002). University students' uses of and reactions to online sexual information and entertainment: Links to online and offline sexual behaviour. *The Canadian Journal of Human Sexuality, 11*(2), 77-89.

List of Contacts

Sexual Assault Support Centre
Counseling Services

Appendix K

1. In general, how comfortable do you feel about using computers?

Comfortable ☐ ☐ ☐ ☐ ☐ ☐ ☐ Uncomfortable

2. In general, how enthusiastic are you toward using computers?

Enthusiastic ☐ ☐ ☐ ☐ ☐ ☐ ☐ Unenthusiastic

3. In general, how knowledgeable are you about using:

a) computer software

Knowledgeable ☐ ☐ ☐ ☐ ☐ ☐ ☐ Unknowledgeable

b) the Internet

Knowledgeable ☐ ☐ ☐ ☐ ☐ ☐ ☐ Unknowledgeable

Appendix L

22. We would like you to tell us how true the following feelings are for you when you receive unsolicited sexually explicit:

	Never true of me					Somewhat true of me	Absolutely true of me
i) pop-ups?							
a) feel indifferent	☐	☐	☐	☐	☐	☐	☐
b) find it enjoyable	☐	☐	☐	☐	☐	☐	☐
c) find it interesting	☐	☐	☐	☐	☐	☐	☐
d) find it to be a nuisance	☐	☐	☐	☐	☐	☐	☐
e) find it offensive	☐	☐	☐	☐	☐	☐	☐
f) find it desirable	☐	☐	☐	☐	☐	☐	☐
g) find it frustrating	☐	☐	☐	☐	☐	☐	☐
ii) inbox messages?							
a) feel indifferent	☐	☐	☐	☐	☐	☐	☐
b) find it enjoyable	☐	☐	☐	☐	☐	☐	☐
c) find it interesting	☐	☐	☐	☐	☐	☐	☐
d) find it to be a nuisance	☐	☐	☐	☐	☐	☐	☐
e) find it offensive	☐	☐	☐	☐	☐	☐	☐
f) find it desirable	☐	☐	☐	☐	☐	☐	☐
g) find it frustrating	☐	☐	☐	☐	☐	☐	☐
iii) junk mail messages? (answer if your mail is separated)							
a) feel indifferent	☐	☐	☐	☐	☐	☐	☐
b) find it enjoyable	☐	☐	☐	☐	☐	☐	☐
c) find it interesting	☐	☐	☐	☐	☐	☐	☐
d) find it to be a nuisance	☐	☐	☐	☐	☐	☐	☐
e) find it offensive	☐	☐	☐	☐	☐	☐	☐
f) find it desirable	☐	☐	☐	☐	☐	☐	☐
g) find it frustrating	☐	☐	☐	☐	☐	☐	☐

Appendix M

23. How often do you solicit or seek out Internet information that is sexually explicit?

Never Sometimes Always

☐ ☐ ☐ ☐ ☐ ☐ ☐

24. How often do you solicit or seek out contacts that would result in you receiving sexually explicit emails?

Never Sometimes Always

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not at all likely Somewhat likely Definitely

25. How likely are you to explore a sexually explicit pop-up site?

☐ ☐ ☐ ☐ ☐ ☐ ☐

Not at all likely Somewhat likely Definitely

26. How likely are you to explore a sexually explicit unsolicited email?

☐ ☐ ☐ ☐ ☐ ☐ ☐

27. How curious are you about the sexually explicit pop-ups you receive?

Never Sometimes Always

☐ ☐ ☐ ☐ ☐ ☐ ☐

28. How curious are you about the sexually explicit unsolicited emails you receive?

Never Sometimes Always

☐ ☐ ☐ ☐ ☐ ☐ ☐

30. How often have you intentionally accessed sexually explicit material on the Internet?

Never Sometimes Always

☐ ☐ ☐ ☐ ☐ ☐ ☐

35. How often have you purchased pornographic materials:

	Never			Sometimes	Always
e) at the convenience or general store	☐	☐	☐	☐	☐
f) at an adult only store	☐	☐	☐	☐	☐
g) through the Internet (mailed to your home)	☐	☐	☐	☐	☐
h) on the Internet (online access only)	☐	☐	☐	☐	☐