The Impact of Sexual Attitudes, Guilt, Knowledge, and Propensity for Sexual Arousal on Self-Reported Sexual Response to a Sexually Explicit Stimulus

by

Samantha Landry

A M.Sc. Thesis
presented to
The University of Guelph

In partial fulfilment of requirements
for the degree of
Master of Science
in
Family Relations and Applied Nutrition
(Family Relations and Human Development)

Guelph, Ontario, Canada

© Samantha Landry, August, 2016
ABSTRACT

THE IMPACT OF SEXUAL ATTITUDES, GUILT, KNOWLEDGE, AND PROPENSITY FOR SEXUAL AROUSAL ON SELF-REPORTED SEXUAL RESPONSE TO A SEXUALLY EXPLICIT STIMULUS

Samantha Landry
University of Guelph, 2016

Advisory Committee:
Dr. Tuuli Kukkonen
Dr. Robin R. Milhausen

In order to determine whether response to a sexually explicit stimulus could be predicted by demographic, attitudinal, knowledge, and religiosity factors, this study invited individuals to the Psychophysiology of Sexual Health lab at the University of Guelph for testing. Fifty-five participants visited the lab on one occasion where they answered a number of questionnaires and watched a series of video stimuli while continuously monitoring their sexual arousal. Participants reported being sexually aroused by the stimuli, however, this arousal was not predicted by the above factors. Several between group differences in sexual response outcomes were found on the basis of gender, sexual orientation, level of sex guilt and religiosity. This study contributes to existing research on factors that impact sexual response. Contrary to prior research, results of this study indicate no significant differences in self-reported sexual arousal to a sexual stimulus between males and females.
Acknowledgements

This process has not been easy and would not have been possible without the immense support I have received throughout it. It has been a tremendous learning experience that has taught me a lot about the importance of perseverance and having people to lean on for support. Though I’ve often joked that more than anything my thesis proves that Murphy’s Law does exist, this experience wouldn’t have been as meaningful without hiccups along the way.

The past couple of years have not been the easiest; however, my advisory committee has been extremely encouraging and accommodating. I would like to thank my advisor Dr. Tuuli Kukkonen for believing that I would make it through, on time no less, even when I had trouble seeing the light at the end of the tunnel. You have provided me with invaluable feedback and resources that made this whole project possible. I would also like to thank Dr. Robin Milhausen for being such a positive force during this process. Your insight and patience are remarkable.

I owe the completion of this project to my family and friends, without whom I probably would have given up long ago. Your unwavering faith in me has been an amazing motivation. Thank you for being so firm in your belief that no education is lost. To Joel, thank you for not letting me lose sight of myself during this process. I think it’s now safe to say that I’ve done more than take naps over the past two years! More than anything I thank you for being my anchor and for keeping both my heart and my stomach full.

Finally, to my lab mates and colleagues, having friends both to celebrate with and to commiserate with has made everything better. You have brilliant minds and continue to impress me. I have so much respect for all of you.
# Table of Contents

**Acknowledgements** iii  
**Table of Contents** iv  
**List of Tables** vi  
**Introduction** 1  
**Literature Review** 1  
  - Attitudes Towards Sexuality 1  
  - Sex Guilt 7  
  - Sexual Health Knowledge 10  
  - Information Processing Theory 14  
  - The Dual Control Model 16  
  - The Present Study 18  
**Methods** 19  
  - Measures 19  
    - Demographic Variables 19  
    - Sexual Orientation and Gender 20  
    - Scales 21  
      - Religiosity 21  
      - Sexual Guilt 22  
      - Sexual Knowledge and Education 22  
      - Sexual Inhibition and Sexual Excitation 24  
      - Self-Reported Sexual Arousal 25  
  - Film Stimuli 26  
  - Procedure 27  
    - Ethics 27  
    - Recruitment 27  
    - Testing 28  
    - Data Analysis 29  
**Results** 30  
  - Sample Characteristics 30  
  - Scales 32  
    - Religiosity 32  
    - Sex Guilt 33  
    - Sexual Health Knowledge 33  
    - Sexual Inhibition and Sexual Excitation 36  
**Research Question #1: Are scores on sex guilt, religiosity, perceived sexual health knowledge, sexual health knowledge, sexual excitation, and sexual inhibition significantly correlated?**  
**Correlations Between Scales** 36
Correlations of Questions about Self-Reported Sexual Arousal 37
Correlations Between Scales and Self-Reported Arousal Items 37

Research Questions #2: Do responses to scales measuring levels of religiosity, sexual guilt, sexual inhibition/sexual excitation, and sexual health knowledge differ significantly by sexual orientation (heterosexual/nonheterosexual), gender (men/women), religiosity (religious/non-religious) or sexual guilt groups (less guilt/more guilt)? 40

Self-Reported Arousal 43
Baseline 43
Experimental Condition 43

Research Question #3: Do responses to items measuring self-reported sexual arousal differ significantly by sexual orientation (heterosexual/nonheterosexual), gender (men/women), religiosity (religious/non-religious) or sexual guilt groups (less guilt/more guilt)? 44

Research Question #4: Do sex guilt, religiosity, perceived sexual health knowledge, sexual health knowledge, sexual excitation, and sexual inhibition predict self-reported sexual arousal, desire, and physical response outcomes to a sexual stimulus? 47

Discussion 49

Summary of Findings 49
Group Differences on Questionnaires 49
Group Differences on Self-Reported Sexual Response 54
Impact on Self-Reported Sexual Arousal 58
Information Processing Theory 59
Dual Control Model 60
Strengths 61
Limitations 63
Research Applications and Areas of Future Research 63

Conclusion 65

References 67

Appendix A – Certificate of Ethical Approval 76
Appendix B – Recruitment Materials 78
Appendix C – Consent Form 84
Appendix D – Screening Interview 89
Appendix E – Socio-Demographic Questionnaire 95
Appendix F – Centrality of Religiosity Scale 98
Appendix G – Sexual Health Knowledge Scale 100
Appendix H – Sex Guilt Scale of Revised Mosher Guilt Inventory 101
Appendix I – Sexual Excitation/Sexual Inhibition Inventory for Women and Men 104
Appendix J – Self-Reported Arousal Questionnaire 106
List of Tables

Table 1 Dependent Outcome Variable Questions and Variable Names
Table 2 Sample Characteristic Frequencies, Means, and Standard Deviations
Table 3 Percentage of Participants who Discussed Sexual Health Topics in Formal Sexual Education and Percentage of Participants who Expressed Sexual Health Knowledge on Each Topic
Table 4 Sexual Health Knowledge Scale Questions and Percentages of Participants Responding to Each Answer with Correct Responses in Bold
Table 5 Correlations Between Measurement Scales
Table 6 Correlations Between Self-Reported Sexual Arousal Items
Table 7 Correlations Between Scales and Self-Reported Sexual Arousal Items
Table 8 MANOVA Results Indicating Differences Between Genders, Sexual Orientations, Religiosity Levels, and Sex Guilt Levels on Self-Reported Sexual Arousal Items
Table 9 Repeated Measures ANOVA Demonstrating Changes in Self-Reported Sexual Arousal from Baseline to Experimental Condition for all Participants
Table 10 Means and Standard Deviations of Self-Reported Sexual Arousal on a Scale from 0-10 for all Participants During Baseline and Experimental Conditions
Table 11 Means and Standard Deviations for MANOVA Operations Between Genders, Sexual Orientations, Religiosity Levels, and Sex Guilt Levels on Self-Reported Sexual Arousal Items
Table 12 Statistically Significant Stepwise Linear Regression with Anxiety as Dependent Variable
Introduction

Sexual functioning and sexual satisfaction are important components of overall well-being and quality of life in men and in women. Higher levels of sexual satisfaction have been linked to greater life-satisfaction, relationship satisfaction, overall health, and happiness (Davidson, Bell, LaChina, Holden, & Davis, 2009; Fisher et al., 2014; Laumann et al., 2006; Stephenson & Meston, 2015). The World Health Organization has identified sexual health and sexual functioning as components of human rights (Khosla, Say, & Temmerman, 2015). Despite the perceived importance of sexual functioning on an individual’s overall well-being, rates of sexual dysfunction and dissatisfaction with sexual relationships remain relatively high in the general population, with recent surveys citing 30-50% of the population experiencing some form of sexual dysfunction in their lifetime (Laumann, Paik, & Rosen, 1999; Mitchell et al., 2013). Furthermore, although a growing number of studies have examined different treatment avenues for men and women who experience dysfunction, relatively little research has been conducted on how an individual’s attitudes and sexual knowledge contribute to their sexual functioning and sexual satisfaction and how these variables might interact with self-reported experiences of sexual arousal. As such, the purpose of the present study was to explore how differences in attitudinal, religion-related, and knowledge variables impact self-reported sexual arousal.

Literature Review

Attitudes Towards Sexuality

When studying attitudes towards sexuality, researchers have focused on several factors including how attitude formation occurs (Chia, 2006; Lefkowitz, Gillen, Shearer,
as well as the relationship between attitudes and sexual behavior 
(Espinosa-Hernández & Lefkowitz, 2009; Guerra, Gouveia, Sousa, Lima, & Freired, 
2012). It is generally accepted that attitudes towards sexuality are multidimensional.
While some researchers have divided participants into conservative and liberal groups, or
positive and negative attitude groups, others have focused strictly on components of
attitudes when conducting studies. Generally, in research focused on attitudes towards
sexuality, individuals are divided into two contrasting groups: those whose attitudes
towards sexuality are more conservative and those who endorse more liberal views.
Sexual liberalism involves beliefs that individuals have sexual freedom and autonomy,
whereas sexual conservatism emphasizes social norms and conventions as well as more
traditional views of sexuality (Guerra & Gouveia in Guerra et al., 2012). To illustrate
this, findings from Guerra et al. (2012)’s two studies on university students in Brazil
indicated that individuals who presented more socially desirable answers in sexuality
research also presented themselves as more sexually conservative. In the second study,
Brazilian university students were asked to complete two questionnaires: the Sexual
Liberalism/Conservatism Scale (Guerra & Gouveia, 2007) and the Basic Value Survey
(Gouveia, 2013). The researchers examined attitudes participants held towards their own
sexual behavior and towards the sexual behavior of others. Overall, participants were
more liberal towards the sexual behavior of others than towards their own sexual
behavior. The researchers hypothesized that this may have been due to social desirability
biases on behalf of participants who wanted to externalize that they were supportive of
others’ behaviors but were not interested in participating themselves. They also found
that those participants who had higher levels of previous sexual experience were more
likely to present more liberal attitudes than those with less experience (Guerra et al., 2012).

Many studies have examined attitudes towards particular sexual behaviors and activities. For instance, a meta-analysis conducted in 2010 by Petersen & Hyde examined gender differences in attitudes concerning casual sex, condom use, and masturbation, among other sexual behaviours. Though gender differences were examined for 30 attitudes and behaviors, most of the differences found were small, according to Cohen’s criteria, with males generally having more permissive attitudes towards sexuality than females (Petersen & Hyde, 2010). In the later study conducted by Guerra et al. (2012) previously described, it was hypothesized that males would endorse more liberal attitudes towards sexuality; however, no significant differences between males and females were found. The discrepancies in these findings may be attributed to cultural differences between North and South America, or generational differences as the meta-analysis was focused on studies published between 1993-2007, and it is possible that gender norms have shifted in the time since then.

One limitation of the research examining attitudes towards sexuality is that studies have largely been focused on attitudes during adolescence and emerging adulthood, as these periods are particularly weighty in the development of attitudes and beliefs held long-term (Sears, 1975). As society has changed and identity development during emerging adulthood has become more recognized, recognition of identity formation lasting beyond adolescence has emerged (Arnett, 2000). While this time is extremely salient and important to analyze, attitudes towards sexuality in adults have the
potential to impact sexual functioning and sexual behaviors and thus their consideration is vital.

Another limitation in existing research on sexual attitudes is that it has largely been focused on clinical populations and therefore cannot be applied to a wider population. That being said, some research has been conducted with more general samples, but these studies have only included female participants. One such example focused on the cognitive processes of females during sexual situations (Morton & Gorzalka, 2013). Morton and Gorzalka (2013) looked at sexual beliefs and negative automatic thoughts occurring during sexual activity to determine whether differences exist in East Asian-Canadians and Euro-Canadians in a sample of Canadian undergraduate students. Their measurement scales included the Sexual Dysfunctional Beliefs Questionnaire (Nobre, Pinto-Gouveia, & Gnomes, 2003), the Sexual Modes Questionnaire (Nobre & Pinto-Gouveia, 2003), the Female Sexual Function Index (Rosen et al., 2000), and the Vancouver Index of Acculturation (Ryder, Alden, & Paulhus, 2000). While differences in sexual beliefs existed between the two groups, very little variance in sexual functioning could be predicted by sexual attitudes. For the East Asian women, the only significant predictor of sexual dysfunction was sexual conservatism, and for the Euro-Canadian women there were no significant predictors. The researchers identified the limited sexual experience of both the East Asian women and the Euro-Canadian women as a potential explanation for these outcomes (Morton & Gorzalka, 2013). As sexual behavior has been identified as a factor in the development of sexual attitudes, being inexperienced could have been the primary predictor of sexual conservatism in
their study. Future research should include participants with a wider range of sexual histories.

Religiosity, or the salience of religion to an individual, has been identified as an important factor to consider when examining individual differences in sexual attitudes. Early sexuality research strongly associated adherence to religion with sexual attitudes and behaviors (Kinsey, Pomeroy, Martin, & Gebhard, 1953). Although the role of religion in western society has changed over time, the significant relationship between these variables has been maintained. For instance, in their study of male and female American emerging adults, Lefkowitz, Gillen, Shearer, and Boone (2004), found that 30% of the variance in sexual attitudes was accounted for by level of religiosity, specifically, taking part in religious rituals, and adhering to their religious teachings in regard to their sexual behaviors. Furthermore, individuals who adhered to their religion’s teachings in regards to sexual behavior and for whom religion played a greater part in daily life tended to have more conservative sexual attitudes (Lefkowitz et al., 2004).

Beckwith and Morrow (2005) considered the impact of religiosity and spirituality on the sexual attitudes of 330 American doctoral students. The researchers predicted that higher religiosity scores would be related to more conservative attitudes towards sex. Sexual attitudes were divided into dimensions: permissiveness, sexual practices, communion in the relationship, and instrumentality. Religiosity was negatively correlated with permissiveness, sexual practices, and instrumentality. No significant association was found between religiosity and communion in the relationship (Beckwith & Morrow, 2005). Furthermore, Ahrold, Farmer, Trapnell, and Meston (2011) conducted a study of 1413 undergraduate university students from a university in the American Southwest in
order to evaluate the impact of religious group differences and individuals’ intrinsic religiosity on sexual attitudes and sexual fantasy. The researchers found that for both men and women, there was a significant effect of religious group on the overall measure of conservative attitudes, with agnostics being less conservative than other religious groups (Ahrold et al., 2011).

Research has also demonstrated a relationship between religiosity and sexual behaviors. A sample of American college students was surveyed about their religiosity and asked to indicate whether they had previously engaged in a number of sexual behaviors (Luquis, Brelsford, & Rojas-Guyler, 2012). The researchers found gender differences in the role of religiosity and spirituality on sexual behavior. Male sexual behaviors were influenced by sexual attitudes, religiosity, and spirituality, while female sexual behaviors were only influenced by their sexual attitudes (Luquis et al., 2012). The relationship between sexual functioning and religion, however, is less clear although one published study has found religion to be a predictor of sexual dysfunction in women (Perez, Sigler & Genoves, 2006). Perez and colleagues identified age and higher religious adherence as the primary risk factors determining sexual dysfunction in their sample of 223 18-76 year old women. In addition to sexual functioning and behaviors, there is at least one published study that has examined the consumption of sexually explicit materials and religion (Nicholas, 2004). In this study of Black South African first-year university students, 75.2% of whom identified as Christian, participants were less likely to report exposure to most types of sexual material if they were more religious. They also found that females were less likely to have been exposed to different types of sexual material and were less approving of it as compared to males (Nicholas, 2004). Thus it
may be that religiosity impacts response to sexually explicit stimuli, in addition to sexual functioning, behaviors, and attitudes.

**Sex Guilt**

Unlike sexual attitudes, which focus primarily on beliefs about sexuality that are external to the individual, sex guilt refers to affective feelings experienced by an individual in a given situation. The concept of sex guilt was originally proposed as a component of a more general measure of guilt (Mosher, 1961; Mosher, 1966; Mosher, 1968). It is defined as “an affective-cognitive structure that results from repeated interactions of the emotion of guilt with cognitions about moral conduct in sexual situations” (Mosher, 1979, p. 224-225). The amount of guilt experienced by an individual in a sexual situation is not spontaneous; it is shaped by past experience and internalized feelings. Mosher and Cross (1971) explain that as a personality disposition, sex guilt is “a generalized expectancy for self-mediated punishment for violating or for anticipating violating standards of proper sexual conduct” (p. 27). They also explain that individuals experiencing sex guilt may be resistant to sexual temptation, experience inhibited sexual behavior, or have trouble focusing and staying present in sex-related situations (Mosher & Cross, 1971).

Attitudes toward sexuality and sex guilt are intrinsically linked. External factors and other people influence both constructs, and both play a part in personality. Similarly, the development of both attitudes and guilty feelings are also tied to behaviors and experiences. As individuals have more sexual experiences, their attitudes towards sexuality change. Many become more open or liberal and accept and endorse attitudes they previously did not. Both Guerra et al. (2012) and Meier et al. (2013) reported that
those individuals with previous sexual experience presented more liberal views than those who did not have previous sexual experience. The range of levels of sex guilt between individuals is significant. While some individuals experience very high sex guilt, others experience very little. Like attitudes towards sexuality, levels of sex guilt are impacted by social and cultural factors (Woo, Brotto, & Gorzalka, 2011).

A number of factors including sex, race, ethnicity, and religion have been used to explain variations in levels of guilt between individuals and groups. For instance, several studies have found sex differences in levels of sex guilt. Mosher (1979) found that men experienced lower sex guilt than women. Daugherty and Burger replicated this finding in 1984. Perhaps due to the greater levels of guilt experienced by women, many researchers have not included men in more recent studies exploring the impact of sex guilt on sexual arousal response (see Woo et al., 2011; Morokoff, 1985; Woo, Morshedian, Brotto, & Gorzalka, 2012; Abdolsalehi-Najafi & Beckman, 2013 for examples).

More recent studies of sex guilt have focused on the relationship between sex guilt, ethnic differences and varying levels of religiosity (Woo, et al., 2011; Abdolsalehi-Najafi & Beckman, 2013; Woo et al., 2012). For example, two studies have looked at differences in levels of sex guilt between East Asian women and Euro-Canadian or Caucasian women (Woo et al., 2011; Woo et al., 2012). In these studies, East Asian women reported significantly higher levels of sex guilt than their Caucasian counterparts. When religiosity was taken into account, sex guilt was found to mediate the relationship between several measures of religiosity and sexual desire for both Euro-Canadian women and East Asian women. Higher levels of religiosity were related to higher levels of sex guilt, which were then associated with lower levels of sexual desire (Woo et al., 2012).
Socialization has also been shown to impact the levels of sex guilt of individuals. For example, Joffe and Franca-Koh (2001) considered how parental non-verbal sexual communication (e.g., nudity in the home, parental displays of affection, and indications of sexual activity) witnessed during childhood is linked to sexual guilt. Though these researchers did not find an overall significant association between current sex guilt and childhood exposure to parental non-verbal sexual communication, some of the items were highly correlated. For example, those individuals who witnessed more non-verbal sexual communication were more likely to endorse the statement ‘masturbation is all right’ and less likely to agree to statements such as ‘when I have sexual desires I fight them for I must have complete control of my body’ (Joffe & Franca-Koh, 2011).

Abdolsalehi-Najafi and Beckman (2013) investigated the influence of sex guilt on an individual’s life and on their general life satisfaction. In their sample of Iranian American women, 42% of women were Iranian-born first generation and 56.9% were U.S. born second generation (Abdolsalehi-Najafi & Beckman, 2013). After separating Muslim identified and non-Muslim women, a significant difference was found in levels of sex guilt, with Muslim identified women experiencing higher levels of guilt than women from other religious groups. Additionally, sex guilt was identified as a significant predictor of life satisfaction. Those who were higher in sex guilt reported lower levels of life satisfaction. Based on their findings, they explained the impact of negative thoughts and beliefs about sexuality goes beyond sexual relationships and could potentially have negative repercussions on social and professional relationships (Abdolsalehi-Najafi & Beckman, 2013).
Several studies have indicated that higher sex guilt is associated with diminished sexual functioning using self-report measures of arousal (Cado & Leitenberg, 1990; Darling, Davidson, & Passarello, 1992). Only one study, conducted by Morokoff (1985), examined psychophysiological measures of sexual arousal in women. The goal of the study was to examine the impact of sex guilt on self-reported and physiologically measured sexual arousal using vaginal pulse amplitude (VPA). Sex guilt was found to be associated with inhibited self-reported sexual arousal. Specifically, individuals who reported greater guilt reported lower levels of sexual arousal when shown sexually explicit material. In contrast, and of surprise to the researchers, women with higher sex guilt were more physiologically aroused, as measured with VPA, than the women who experienced less guilt when exposed to sexually explicit material. The researchers proposed that the women who experienced high levels of physiological sexual arousal and high levels of sex guilt might also have experienced higher levels of sexual inhibition and therefore perceived themselves as less aroused or as having lower arousability. Though the researchers were unable to explain this phenomenon, they suggested that the division of the high guilt and low guilt groups might have impacted findings. The groups were divided by using a median split since their sample did not include participants with very high guilt (Morokoff, 1985). Though Morokoff’s (1985) findings were significant, the study failed to examine how levels of sex guilt would impact male sexual arousal functioning.

**Sexual Health Knowledge**

Very little research exploring the potential importance of sexual health knowledge to behaviors, functioning, and attitudes has been conducted (for exceptions see
Milhausen, et al., 2013; Kummar et al., 2013; Coleman & Testa, 2007). While knowledge of sexual health, or at least perceived knowledge of sexual health is likely an important predictor of sexual behaviors, possibly due to comfort and confidence in discussing sexuality related issues, researchers have rarely studied this relationship empirically. This may be due to a lack of existing psychometrically sound sexual health knowledge scales or to different expectations of knowledge across geographical, cultural, and age groups. Some notable exceptions in which researchers have attempted to depict an association between sexual health knowledge and sexual behaviors do exist. The following studies provide some examples of the research being conducted on the subject.

In 2012/2013, Trojan and the Sex Information and Education Council of Canada (SIECCAN) conducted a study examining condom use in 653 Canadian university students. A short measure of sexual health knowledge was created for use in the study. While sexual health knowledge was not the primary focus of the research, it was determined to be a significant predictor of condom use. The research team found that for each unit increase in knowledge, a 21% increase in the likelihood of condom use at last penile-vaginal intercourse followed (Milhausen et al., 2013). To our knowledge, this is the only published study to have examined an association between sexual health knowledge and sexual behavior, in this case, condom use. Unfortunately, there is no research examining the impact of sexual health knowledge on engagement in other types of sexual activities or investigating the impact of sexual health knowledge on sexual response.

Research examining sexual health knowledge, or lack thereof, more broadly has exposed a number of educational gaps in individuals. Kumar and colleagues (2013)
examined the sexual health knowledge of Canadian adolescents after completing standard high school sexual education requirements. Their findings indicated that even after receiving formal sexual education, students still demonstrated significant gaps in sexual health knowledge, particularly related to reproductive physiology, contraception, HIV/AIDS, and sexual assault (Kumar, et al., 2013). Though there has been a push to provide more thorough and inclusive sexual education in the Canadian context, these findings demonstrate that even when students are receiving the outlined curriculum, many walk away without adequate knowledge of sexual health related topics and issues.

A survey of sexual health knowledge, attitudes, and behaviors conducted in London, UK, asked a sample of 15 to 18 year old Black and ethnic minority adolescents a series of sexual health related questions (Coleman & Testa, 2007). Study participants answered questions about pregnancy, STI’s and HIV; an overall sexual health knowledge score, with a maximum of 25 points, was derived from responses. Females had higher mean sexual health knowledge scores than males (18.5 vs. 16.6). Significant ethnic differences were found in sexual health knowledge scores with White British males and females scoring highest (18.4 and 20.7 on average respectively). Pakistani males, Black African males, Pakistani females, White Other males, and Bangladeshi males scored lowest overall (15.4, 15.2, 15.0, 14.6, and 14.2 respectively). Despite the fact that only descriptive statistics were reported, the lack of sexual health knowledge is concerning particularly when considering that 38% of males and 23% of females who participated in the study reported having engaged in penile-vaginal or anal intercourse (Coleman & Testa, 2007).
Sexual health knowledge, attitudes, and behaviors have been related to sexual health outcomes, with more knowledge contributing to better sexual health outcomes (Walsh & Ward, 2010). In their study on the influence of magazine reading on adolescent sexual health knowledge and behaviors in 579 American undergraduate students, Walsh and Ward (2010) found that sexual health knowledge was positively related to safe-sex self-efficacy and contraceptive use in women and safe-sex self-efficacy in men.

Though results from these studies indicate numerous gaps in sexual knowledge and suggest that higher knowledge may contribute to safer sex behaviors, the opposite has also been found. A study conducted by Lou & Chen (2009) looked at the relationship between sexual knowledge, sexual attitudes, and safe sex behaviors in a sample of adolescents at a junior college in Taiwan. Data were collected about each of these topics with the guiding hypothesis that sexual knowledge would have a positive influence on sexual attitudes and on safe sex behavior. A Sexual Knowledge Scale (SKS) was developed for this study; the scale was made up of two factors, pregnancy knowledge, and sexual physiological knowledge. A Sexual Attitudes Scale (SAS) was also developed by the researchers to measure two dimensions of sexuality attitudes: premarital sexual permissiveness and gender interaction. Finally, the researchers created the Safe Sex Behavior Questionnaire (SSBQ) to measure the safe sex behavior of the adolescents surveyed. The researchers found that sexual knowledge did not have a direct effect on safe sex behavior. Sexual knowledge was determined to have a significant direct negative effect on sexual attitudes. Though these results contradict those of the other studies considered, this may be partially due to the narrow scope of both the sexual knowledge subjects and sexual attitudes examined (Lou & Chen, 2009).
Sexual health knowledge has not been assessed directly in association with sex guilt or sexual functioning. Sex guilt has been related to endorsement of sex related myths, which could be conceptualized as an extension to one’s lack of knowledge of sexual health. Mosher (1979) postulated that individuals with high sex guilt would endorse more myths, as they are less likely to seek out information regarding sexuality. In his study, as levels of sex guilt increased, so did the number of sex myths endorsed (Mosher, 1979). Not only do these individuals demonstrate a lack of legitimate knowledge, but also by endorsing myths they may be contributing to the dissemination of false information. More research is needed investigating the relationships between sexual knowledge, attitudes, and guilt in relation to sexual functioning.

**Information Processing Theory**

Theory could be a useful tool for explaining the relationship between attitudes, sex guilt and sexual functioning. Information Processing Theory (Janssen, Everaerd, Spiering, & Janssen, 2000) specifically could provide a framework for understanding the complex relationship between each of these variables and how they work together to explain individual variation in research results. Many existing models of sexual arousal, for example Masters and Johnson’s model of human sexual response (1966), have concentrated primarily on physiological components and have failed to consider the complexity and variation in patterns of arousal. Though some models, such as Kaplan’s revised model of human sexual response (1977) and Basson’s (2000) female model of sexual response have taken into account more psychological aspects, neither explain how previous behaviors and cognitions impact arousal. Janssen & Everaerd (1993) identified two concepts as particularly relevant when studying sexual arousal. First, they suggested
that sexual stimuli might have more than one meaning. Second, they proposed that there are different levels of cognitive processing that can impact components of sexual arousal. Based on these components of Information Processing Theory (IPT), Janssen and colleagues (2000) have examined the automatic processes surrounding sexual arousal and have proposed a new model of sexual arousal, the Information Processing Model (IPM).

In Janssen and colleagues’ (1993; 2000) model, the process begins with a stimulus that is encoded in the brain and matched with memory events giving it emotional meaning. If the memory event the stimulus is matched with is primarily sexual, attentional processes and the central pathways are triggered and respond agreeably. When this occurs, one’s attention is attracted to the sexual content of the stimulus enhancing sexual meaning processes and genital response. However, if one’s focus is on the non-sexual aspects of the stimulus, one’s attentional processes are divided and low levels of subjective sexual arousal occur. This model has been used to describe the experiences of individuals with disordered sexual response. When meanings derived from a sexual stimulus are worry-related, though a genital response likely occurs, one’s negative thoughts and emotions will prevent them from experiencing full subjective sexual arousal (Janssen et al., 2000).

In relation to the current study, individuals who experience high levels of sex-guilt and more conservative (or less sex-positive) attitudes towards sex would likely appraise sexual stimuli in a primarily non-sexual way and therefore experience inhibited subjective arousal and potentially self-report less genital response. In contrast, those individuals who experience little sex guilt and have more positive/liberal attitudes towards sex would likely appraise a sexual stimulus as primarily sexual and experience
greater subjective and genital arousal. Though Morokoff’s (1985) findings that women with higher sex guilt became more aroused in response to being shown sexually explicit material are contradictory to this assumption, information processing theory suggests that this may not be replicated in the current study. Since being proposed by Janssen and colleagues, Information Processing Theory has been used to explain the impacts of experimentally adopted schemas on sexual arousal (Kuffel & Heiman, 2006; Middleton, Kuffel, & Heiman, 2008). It has also been used to assess sexual preference in forensic research with child sex offenders (Hall, Hogue, & Guo, 2014) and individuals with pedophilic sexual interest (Mokros, Gebhard, Heinz, et al., 2012) however, to our knowledge, it has not been applied to the study of the relationship between sexual attitudes and sexual arousal.

**The Dual Control Model**

The Dual Control Model, originally proposed by Bancroft (1999) explains human sexual response as the combined outcome of two simultaneous brain systems: sexual inhibition and sexual excitation. Bancroft and Janssen (2000) contend that all individuals are amenable to certain levels of inhibition and excitation to a sexual stimulus. Sexual inhibition and sexual excitation are understood as separate simultaneous processes in that one individual can experience both high inhibition and high excitation or low inhibition and low excitation. Both inhibition and excitation responses operate on a continuum and any combination of the two is possible due to a blending of genetic predisposition and early learning. Bancroft and Janssen (2000) explain that everyone operates with some level of inhibition, which acts as a protective mechanism and can prevent individuals from engaging in risky behaviors. Sexual dysfunction can result from being too inhibited
in response to sexual stimuli. Conversely, sexual excitation refers to the propensity of an individual to become sexually aroused when exposed to an erotic stimulus. Sexual response then is dependent on an individual’s appraisal of a stimulus and predisposition to be excited or inhibited.

Bancroft, Graham, Janssen, & Sanders (2009) furthered our understanding of the Dual Control Model, specifically related to its applicability for men and women. Using the model to measure sexual responsiveness in individuals may provide more evidence to understanding sexual dysfunction, sexual risk taking, and other sexual behaviors. The authors explained that there are three assumptions underlying the Dual control model. First, inhibition is an adaptive pattern that prevents humans and other species from engaging in sexual activity in situations that are dangerous or could have negative outcomes. Second, as explained previously, humans vary in their predisposition to both sexual inhibition and sexual excitation. Finally, an individual’s history impacts their sexual response (Bancroft et al., 2009).

Scales measuring sexual inhibition and sexual inhibition have evolved since the Dual Control Model was originally proposed. The most recent scale assessing propensity for sexual inhibition and excitation, the Sexual Excitation/Sexual Inhibition Inventory for Women and Men (SESII-W/M) (Milhausen, Graham, Sanders, Yarber, & Maitland, 2010) was validated with a sample of men and women and has been recommended for use with both genders (whereas the SIS/SES was developed originally for use with men). Milhausen and colleagues reported a good fit for the scale for men and women. Factor scores on the scales are relatively normally distributed, however, gender differences have consistently been found (Milhausen et al., 2010). The Dual Control Model, and more
specifically sexual inhibition and sexual excitation have the potential to explain a great
deal of variation in sexual response to sexual stimuli in a lab. Physiological and self-
reported sexual arousal could both be explained by predispositions towards SI and SE.

**The Present Study**

Healthy sexual functioning and sexual well-being have a demonstrated impact on
overall health and well-being (Khosla et al., 2015). As such, research that determines
barriers to and facilitators of sexual functioning is a worthy endeavor. However, current
research linking attitudes and sex guilt, specifically, to sexual functioning, is limited in a
number of ways. Much of the research that has been conducted focuses only on females
(Abdolsalehi-Najafi & Beckman, 2013; Kuffel & Heiman, 2006; Middleton, et al., 2008;
Woo, Brotto, & Gorzalka, 2011; Woo et al., 2012). In addition, it is possible that sexual
health knowledge could play an important role in the formation and maintenance of both
sexual attitudes and sex related guilt.

The aim of this research is to investigate the degree to which individuals’ attitudes
regarding sexuality, sex-related guilt, and sexual health knowledge predict self-reported
sexual arousal in response to a sexual stimulus. In contrast to previous research, both men
and women will be included in this research.

Beyond the overarching goal of the research, several smaller research questions
will guide this research and analysis. The following questions were answered:

1. Are scores on sex guilt, religiosity, perceived sexual health knowledge, sexual
   health knowledge, sexual excitation, and sexual inhibition scales significantly
correlated?
2. Do scale scores measuring levels of religiosity, sexual guilt, sexual inhibition/sexual excitation, and sexual health knowledge differ significantly by sexual orientation (heterosexual/nonheterosexual), gender (men/women), religiosity (religious/non-religious) or sexual guilt groups (less guilt/more guilt)?

3. Do responses to items measuring self-reported sexual arousal differ significantly by sexual orientation (heterosexual/nonheterosexual), gender (men/women), religiosity (religious/non-religious) or sexual guilt (less guilt/more guilt)?

4. Do sex guilt, religiosity, perceived sexual health knowledge, sexual health knowledge, sexual excitation, and sexual inhibition predict self-reported sexual arousal and response outcomes to a sexual stimulus?

**Methods**

**Demographic Variables.** Participant demographic information was collected during the telephone eligibility screening and during the laboratory session at the Psychophysiology of Sexual Health (POSH) Lab at the University of Guelph. Research participants were asked to answer questions related to age, gender, racial/ethnic background, relationship status, education level, and religiosity. Phrasing of demographic questions was carefully considered and intentional. Questions about gender, sexual orientation and religious affiliation were open ended; participants were asked “how would you describe ___”. Choices were provided for the questions related to ethnic background, relationship status, and education level with the option to specify another answer. Appendix E provides the full demographic questionnaire.
**Sexual Orientation and Gender.** Sexual orientation and gender were used as independent variables in the present study. All study participants identified as cis-gender with 25 identifying as male and 30 identifying as female. Though participants identified a number of sexual orientations, for the sake of analysis the sample was divided into heterosexual and nonheterosexual groups. While it is generally understood that sexual orientation can be explained on a continuum where neither end is associated with more or less value, there may be merit to using nonheterosexual as a label for all individuals that do not identify as heterosexual. In a recent critique of Bailey et al., 2016, Savin-Williams explained that researchers will often collapse categories into nonheterosexual because they either did not recruit enough nonheterosexual individuals or because of theoretical underpinnings suggesting categorical orientations (Savin-Williams, 2016). For this particular research study, no attempts were made to recruit individuals with particular orientations. It is primarily due to the small number of individuals who did not identify as heterosexual and to the theoretical evidence suggesting that there may be differences in sex guilt and sexuality-related attitudes between heterosexual individuals and those who identify within sexual minority categories that this categorization was made. The salience of a sexual minority identity and the experience of being stigmatized may create a shared experience for those identified as nonheterosexual, warranting their grouping. As Savin-Williams (2016) alludes, this categorization is not meant to group nonheterosexuals as anomalies but instead to continue promoting authentic voices being recognized. In total, in this study, 37 participants were grouped as heterosexual, and 18 were categorized as nonheterosexual.
Scales. The scales used in the present study were religiosity, sexual attitudes, sexual guilt, sexual excitation and inhibition, and sexual knowledge and education.

Religiosity. Participants were asked about the importance of religion and spirituality using the 7-item version of the Centrality of Religiosity Scale (CRS-I-7) developed by Huber in 2003. Specifically, the measure captures the centrality or importance of religious life to individuals (Huber & Huber, 2012). The scale is based on the five core dimensions of religion proposed by Glock (1962, 1973): the intellectual, the ideological, the ritualistic, the experiential, and the consequential. The 7-item scale used in the present study included two recently developed items added to go beyond the original monotheistic religions that were originally included. These two additional items encompassed private spirituality practices. Example items on the CRS-I-7 are: “To what extent do you believe that God or something divine exists;” “How often do you pray;” and “How often do you meditate” (Huber & Huber, 2012). This particular measure of religion was selected for being inclusive of not only institutional practices but also of spiritual practices that may not captured within traditional definitions of religion. Practices such as mindfulness, meditation and contemplation of religious issues are all captured within the CRS-I-7. Individuals who score highest on the scale have a more central religious construct system. The scale has been translated into 18 languages and used in over 100 studies in 25 countries. The construct validity of the CRS has been demonstrated in several studies, in which results of the scale were compared with self-reports of the importance of religion to individuals. According to Huber (2003; 2009), correlation coefficients for the scale range between 0.78 and 0.67 (as cited in Huber,
2012). The internal consistency score (Cronbach’s Alpha) of the CRS-I-7 derived from the international Religion Monitor conducted in 2007 was .84 (Huber & Huber, 2012).

**Sexual Guilt.** The sex guilt scale of the Revised Mosher Guilt Inventory (RMGI) was used to measure individuals’ feelings of guilt towards sexuality. The complete RMGI measures Sex-Guilt, Hostility-Guilt, and Morality-Conscience and is suitable for adult populations. The 50 items measuring sex guilt were used in the present study. The questionnaire was developed to measure sex guilt as a personality disposition. It is defined as “a generalized expectancy for self-mediated punishment for violating or for anticipating violating standards of proper sexual conduct” (Mosher & Cross, 1971, p. 27). Items in the RMGI are arranged in pairs of responses and are rated on a 7-point Likert type scale. Sample questions from the sex guilt subscale of the RMGI include “Masturbation is wrong and will ruin you” and “Masturbation helps one feel eased and relaxed” (Mosher, 2013, p. 323). The RMGI is designed to give researchers the option of using one or several of the scales. The scale has been validated over 100 times since its development and is largely supported as a valid measure of guilt (Mosher, 2013). The construct validity of the sex scale of the RMGI was evaluated in 2011 by Janda & Bazemore. Higher levels of sex guilt were significantly associated with past versions of the Mosher Guilt Inventory (.82, .95), not having had sex (-.25), having fewer partners (-.22) and having sex at a later age (.20) (Janda & Bazemore, 2011).

**Sexual Knowledge and Education.** The Sexual Health Knowledge Scale (SHKS) developed by the Sex Information and Education Council of Canada was used to measure the sexual knowledge of participants (Milhausen et al., 2013). The questionnaire was designed to focus on sexual health matters individuals should have knowledge of in order
to protect their sexual health. Participants are able to select ‘true’, ‘false’ and ‘I don’t know’ as possible answers for each of the 10 items. Questions focus on knowledge of sexually transmitted infections, conception, contraception, sexual problems, and sexual behavior in a Canadian context. Items include “Most Canadians aged 20 to 24 have had more than one sexual intercourse partner in the past year;” “Premature ejaculation (coming too soon) is the most common sexual dysfunction among men;” and “Most cases of genital herpes transmission occur when the infected partner has no visible symptoms” (R. Milhausen, personal communication, August 19, 2015). In order to score the questionnaire, the number of items answered correctly is summed. Items that have been answered ‘I don’t know’ are tallied as incorrect. Possible scores range from 0 to 10, with 0 indicating no knowledge of sexual health and 10 indicating a high level of sexual health knowledge (Milhausen et al., 2013).

In order to gather more descriptive information about sexual health knowledge, questions about the delivery and content of sexual education received were also asked. These items are used to describe the sample and were not used in answering the research questions. The sexual education specific questions focused on whether participants felt they received adequate sexual education, who provided their sexual education, and which topics were discussed in their sexual education. Participants were asked “Did you receive any formal sexual education (ie. school, community groups, etc.)”. They were also asked to identify which topics from a list of ten, if any, were discussed in their formal sexual education. This list included: contraception, abstinence, STI’s/STD’s, masturbation, sexual dysfunction, anatomy, consent, sexual orientation, puberty, and reproduction. Participants were also asked to identify which of the same list of topics they felt informed
about or knowledgeable of at present time. These questions were developed for the purpose of this study using university sexual health textbooks and by considering topics that other studies have identified as problematic areas of knowledge (Hyde & DeLamater, 2014; Rathus, Nevid, Fichnew-Rathus, Herold, & McKay, 2013; Kumar et al., 2013; Coleman & Testa, 2007).

**Sexual Inhibition and Sexual Excitation.** Propensity for sexual inhibition and sexual excitation were measured using the Sexual Excitation/Sexual Inhibition Inventory for Women and Men (SESII-W/M). The questionnaire was developed as an expansion to the original separate Sexual Inhibition/Sexual Excitation Scales for men and women (Mihausen et al., 2010) in order to be applicable to both men and women. The questionnaire has been recommended for use in people of different ages, orientations, and levels of sexual experience. It includes 30 items divided into six factors (inhibitory cognitions, relationship importance, arousability, partner characteristics and behaviors, setting (unusual or unconcealed), and dyadic elements of the sexual interaction) scored on a four point Likert-type scale and takes between 10 and 15 minutes to complete. The scale ranges from 1 *strongly disagree* to 4 *strongly agree* (Milhausen, Graham, & Sanders, 2013). Some example items are “If I think about whether I will have an orgasm, it is much harder for me to become aroused;” “Sometimes I am so attracted to someone I cannot stop myself from becoming sexually aroused;” and “If I think that a partner might hurt me emotionally, I put the brakes on sexually.” The scale demonstrated reliability with a sample of men and women from a Canadian university. Pearson’s correlations were used to establish test-retest reliability. Correlations between factors on two completion occasions of the scale were all significant at the $p < .005$ level and ranged
Convergent and discriminant validity of the SESII-W/M scales have been demonstrated by examining correlations with several other survey such as the Sexual Opinion Survey and the Sexual Sensation Seeking Scale (Milhausen et al., 2010).

**Self-Reported Sexual Arousal.** A continuous measure of self-reported sexual arousal and several items measuring physical sexual response, sexual desire, and self-reported arousal were examined as dependent variables after administering the baseline and experimental stimuli.

**Self-Reported Sexual Arousal.** Subjective sexual arousal was assessed using two measures. For the first, participants were asked to continuously report their sexual arousal while watching each film stimulus by clicking up and down on a handheld tracking device. The continuous measure of arousal was measured on an 11-point scale ranging from 0 to 10 with 0 indicating *not at all sexually aroused* and 10 indicating *extremely sexually aroused.*

Second, participants were asked to complete a self-report arousal questionnaire after each of the film stimuli. Questions included overall reactions to the film, feelings of sexual arousal during the film, and perceptions of genital arousal during the film. As in the continuous measure of self-reported sexual arousal, all items on the questionnaire except for sexual arousal during the video in comparison to sexual arousal with a partner (which ranged from -5 *much less sexually aroused* to +5 *much more sexually aroused* with 0 indicating no difference) were measured on an 11-point Likert type scale ranging from 0 *not at all* to 10 *the most I’ve ever felt.* This self-report sexual arousal questionnaire has been used previously (see Kukkonen, Binik, Amsel, & Carrier, 2010).
and Kukkonen et al., 2007 for examples). Several questions from the self-report questionnaire were used for analysis. The following list of questions were among those answered by participants immediately after watching each film:

<table>
<thead>
<tr>
<th>Question</th>
<th>Variable name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, how anxious did you become during this film?</td>
<td>Anxiety</td>
</tr>
<tr>
<td>How would you rate your peak arousal during the film?</td>
<td>Discrete peak sexual arousal</td>
</tr>
<tr>
<td>Overall, how sexually aroused were you physically during the film?</td>
<td>Overall physical sexual arousal</td>
</tr>
<tr>
<td>Did watching the video make you feel like having sex with a partner?</td>
<td>Desire to have sex</td>
</tr>
<tr>
<td>Did watching the video make you feel like masturbating?</td>
<td>Desire to masturbate</td>
</tr>
<tr>
<td>How much genital tingling or fullness did you feel during the film?</td>
<td>Genital tingling</td>
</tr>
<tr>
<td>How would you rate your erection in response to this film?</td>
<td>Erection response</td>
</tr>
<tr>
<td>How sexually aroused did you feel during the film as compared to how sexually aroused you typically are with a partner?</td>
<td>Sexual arousal compared to with partner</td>
</tr>
</tbody>
</table>

**Film Stimuli.** The film stimuli used to establish baseline and experimental genital and subjective arousal were selected by members of the POSH Laboratory team. Participants were shown a series of three 15-minute films through multimedia goggles and headphones. The first two films were neutral in nature (Guðmundsson, 2014) and the third was sexually explicit (X-Art, 2015). The films used for acclimatization and baseline measurement were taken from a nature documentary containing no voice track or images of humans. The sexually explicit film was chosen based on research examining what activities people found most arousing in sexually explicit films (Woodard et al., 2008). It contained consenting heterosexual adults engaging in a variety of sexual behaviors including kissing, mutual masturbation, oral genital stimulation and penile-vaginal intercourse.
Procedure

**Ethics.** The Research Ethics Board at the University of Guelph approved the present study (see Appendix A for REB certificate). After prospective participants made email contact with the researchers, they were informed of the requirements of the study and asked to schedule a time to complete the telephone-screening questionnaire privately. During this screening, prospective participants were made aware that they could withdraw from the screening and the study at any time without suffering any consequences. Interested participants who met all of the eligibility criteria were provided with a letter of information and consent prior to visiting the laboratory (see Appendix C). Upon arrival at the laboratory, the consent process occurred and participants were informed again that they could refrain from answering any question they wanted and that they could cease participation at any point during the visit. The study did not involve any deception. Participants were informed of the purpose of the study and were encouraged to ask any questions. All participants who visited the lab completed the testing session in full. Participants were offered $40 compensation to help offset any costs associated with participation (e.g., parking, time lost from work). This compensation facilitated attendance at the laboratory session but was not intended to induce participation.

**Recruitment.** Recruitment occurred using an info-graphic (see Appendix B) both on social media platforms (ie. Facebook, Twitter) and on community bulletin boards (posters in coffee shops and on other community bulletin boards). Snowball sampling occurred as several participants encouraged friends and partners to participate after having visited the lab for the testing session.
Testing. Interested individuals completed a phone screening with the researcher to determine eligibility in the study. In order to qualify for the laboratory sessions interested individuals must have identified as cis-gender, be between the ages of 18-45, be pre-menopausal, and have no current sexual dysfunction. Interested individuals were excluded for taking any medications that might interfere with sexual functioning and desire (ie. SSRIs and HRTs). Those who indicated that they did not believe they would be aroused by a heterosexual sexually explicit video were also excluded. After completing the screening procedure, eligible participants were scheduled for an individual visit to the Psychophysiology of Sexual Health (POSH) laboratory at the University of Guelph in order to complete the one and a half hour testing session. Upon arrival at the laboratory participants were asked to read and sign the letter of information and consent and the experimenter answered any initial questions they had about the study procedures. After doing so, participants completed a semi-structured demographic questionnaire with the researcher. Upon completion of the demographic questionnaire, they were asked to complete the measures of religiosity and spirituality, sexual inhibition/excitation, sexual attitudes, sex guilt, and sex knowledge using Qualtrics, a web-based survey system on the password protected, disk encrypted computer in the laboratory (Qualtrics, Provo, UT).

Participants were given a tour of the lab and a demonstration of the thermal imagining equipment (thermal imaging assessments were conducted as a part of a larger study and were not included in the current research). The researcher explained how to use all of the equipment in the room and provided information about how communication would occur between the testing room and the server room where the researcher would be
located during the testing. The medical examination table and knee stirrups were positioned so that the participant would sit comfortably. Both stirrups were used for female participants and males were asked to place one knee in a stirrup and hang their other leg off of the table for an ideal camera angle. After providing a detailed explanation of the equipment, the researcher left the room closing and locking the door of the testing room behind them. Participants undressed from the waist down and sat on the table where they put on the DVD goggles. The researcher communicated with each participant before and after each film to establish ongoing consent and desire to move forward with the study visit. Participants were asked to watch three 15-minute film clips on the DVD goggles. During each of the films they were asked to self-report their feelings of arousal with a handheld controller. Following each of the films, the self-report sexual arousal questionnaire was shown on the participant’s goggles. Participants were asked to answer each question out loud. The researcher then repeated the participant’s answer to ensure clear communication. Following the third and final film questionnaire, participants were asked to dress and exit the testing room. Compensation for the study visit was provided and participants were given an opportunity to ask any further questions and provide feedback on their visit.

**Data Analysis.** Frequencies and descriptive information including means, percentages and standard deviations were calculated for each of the scales as well as for the delivery and content of sexual health education. In order to answer the research questions, Pearson’s correlations, MANOVA, repeated measures ANOVA and linear regressions were conducted as appropriate. Total scores were computed for each of the administered scales. More information about each of the scales is provided in the
measures section. Pearson’s correlation analyses were conducted to determine the existence of relationships between the scales and self-reported arousal to the sexually explicit stimulus. Participants were divided into groups for MANOVA analysis based on gender, sexual orientation, religiosity and sexual guilt. The religiosity questionnaire groups individuals into three categories: non-religious, religious, and very religious. As there was only one person who fell into the very-religious category, for the purpose of analysis they were grouped within the religious category. For the sex-guilt scale of the RMGI, a median split was used to separate participants into two groups: higher sex guilt and lower sex guilt. These independent variables were then used in a MANOVA to determine whether there were group differences in self-reported arousal during the sexually explicit stimulus. Repeated measures ANOVAS were also conducted using the same variables to verify whether there were significant differences in self-reported arousal from baseline to the experimental condition. Finally, stepwise linear regressions were conducted using gender and sexual orientation as control variables, total scores on the CRSi, RMGI, SES, SIS, SHK, and PSHK scales as the predictors, and the item responses to self-reported arousal as the outcome variable.

**Results**

**Sample Characteristics**

In total, 101 individuals were screened for the study. A total of 19 individuals were excluded after completing the screening interview for the following reasons: SSRI and SNRI medication use (3 females and 10 males). Three individuals were excluded because they identified as transgender and were currently taking or had recently taken hormone replacement medications that may have influenced sexual desire and arousal.
response. Additionally, one participant was excluded for having an irregular menstrual
cycle, one female identified sexual desire and arousal issues, and finally one participant
misread the recruitment materials and was located too far away. Due to these criteria
making some interested individuals ineligible and to some scheduling conflicts that arose
(n= 20) the final study sample included 55 participants. Among those individuals, 25
(45.5%) identified as male and 30 (54.5%) identified as female. The average age of
participants was 27.27 years old (S.D. 6.04, minimum = 18, maximum = 42).

The sample was predominantly White, with 47 participants (85.5%) identifying as
White/European, 1 (1.9%) identifying as Black/African/Caribbean, 2 (3.8%) as Southeast
Asian, 1 (1.9%) as South Asian, 2 (3.8%) as Latin American, and 2 (3.8%) as Other.
English was identified as the mother tongue of 90.7% of participants. Most of the sample
had some post-secondary education (94.5%). See table 2 for sample characteristics.

Table 2
Sample Characteristic Frequencies, Means, and Standard Deviations

<table>
<thead>
<tr>
<th>Total (n = 55)</th>
<th>n</th>
<th>Mean / %</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>25</td>
<td>45.5%</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>30</td>
<td>54.5%</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>27.27</td>
<td>6.04</td>
</tr>
<tr>
<td>Ethnic Background</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White/European</td>
<td>47</td>
<td>85.5%</td>
<td></td>
</tr>
<tr>
<td>Black/African/Caribbean</td>
<td>1</td>
<td>1.9%</td>
<td></td>
</tr>
<tr>
<td>Southeast Asian</td>
<td>2</td>
<td>3.8%</td>
<td></td>
</tr>
<tr>
<td>South Asian</td>
<td>1</td>
<td>1.9%</td>
<td></td>
</tr>
<tr>
<td>Latin American</td>
<td>2</td>
<td>3.8%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>3.8%</td>
<td></td>
</tr>
<tr>
<td>Highest Level of Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td>3</td>
<td>5.5%</td>
<td></td>
</tr>
<tr>
<td>University/College</td>
<td>34</td>
<td>61.8%</td>
<td></td>
</tr>
</tbody>
</table>
Postgrad/Professional 18 32.7%
Current Dating/Couple Status
  Single 15 27.3%
  Monogamous 33 60.0%
  Consensual Non-Monogamous 7 12.7%
Sexual Orientation
  Heterosexual* 37 67.3%
  Gay 3 5.5%
  Lesbian 1 1.8%
  Bisexual 4 7.3%
  Queer 3 5.5%
  Pansexual 7 12.7%

*The category ‘heterosexual’ also includes individuals who identified as mostly-heterosexual

Scales

Religiosity. Participants were asked to identify their religious affiliation when completing the demographic survey. Responses to this question were then grouped into categories: 14.5% of people identified as Christian, 7.3% as non-practicing Christian, 20.0% as agnostic, 14.5% as atheist, 34.5% as non-religious, and 9.1% as spiritual. The Centrality of Religiosity Scale (CRSi-7) was used to determine the salience of religion and spirituality to individuals. Using responses on the scale, respondents were grouped into three categories: highly-religious (score of 4.29), religious (scores of 2.00 to 3.86), and non-religious (scores of 1.00 to 1.86). Possible range of the CRS score is 1.0 to 5.0 (least religious to most religious). Participant scores in the present study ranged from 1.0 to 4.29. In this sample of individuals, 47.3% of participants ($n = 26$) were categorized as non-religious; 50.9% ($n = 28$) as religious; and 1.8% ($n = 1$) as highly-religious. On average, participants were classified as religious ($M = 2.26$, $s.d. = .72$).
**Sex Guilt.** All study participants completed the sex-guilt scale of the Revised Mosher Guilt Inventory (RMGI). The scale was demonstrated as reliable ($\alpha = .808$). Due to a technical error that occurred when the surveys were distributed, several participants had missing data on the RMGI. Little’s test was used to verify whether the data were missing completely at random (MCAR). The test was non-significant ($p = .332$) confirming that the data were MCAR. This allowed for data imputation using expectation maximization. After EM was conducted, sexual guilt scores were computed for each participant. Though results of this scale could potentially range from 0 to 300, with 0 indicating no sex-guilt and 300 indicating the maximum amount of sex guilt, participants in this study endorsed low sex guilt overall. The mean guilt score was 52.51, $S.D. = 18.83$ with a range of 75.10 from 24.23 to 99.32. Overall, this sample did not report experiencing high sex guilt. Even those participants with the highest scores were among the lowest possible third of the scale. In order to be able to examine whether differences exist between those who experienced more and less sex guilt, a median split was performed on the data. The median score for the RMGI was 50.0. Those individuals who scored between 18.83 and 50.0 were categorized as less guilty, and those whose scores were greater than 50.0 were categorized as more guilty.

**Sexual Health Knowledge.** Using a list of ten subjects, participants were asked to identify which topics, if any, were discussed in their formal sexual education. In addition, they were asked to report which topics, from the same list, they felt informed about/knowledgeable about at the time of the testing session. Most participants (89.1%, $N = 49$) indicated that they did, at one point, receive formal sexual education. These individuals, on average, reported having discussed $M = 6.96$ ($S.D. = 1.87$) topics from the
list of 10 they were presented. Some of the topics were discussed more than others. For example, all participants who recalled receiving formal sexual education reported learning about reproduction; however, only 22% recalled learning about sexual dysfunction. All participants indicated which topics from the same list they felt knowledgeable about at the time of testing. Overall, the study participants perceived their sexual health knowledge as very high and indicated feeling informed about $M = 9.44$ (S.D. = 1.20) topics on average out of a possible 10 topics. Table 3 provides means and percentages for each of the topics.

Table 3

<table>
<thead>
<tr>
<th>Topics</th>
<th>Formal sex education</th>
<th>Perceived knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$N = 49$</td>
<td>$N = 55$</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>S.D.</td>
</tr>
<tr>
<td>Contraception*</td>
<td>94</td>
<td>0.24</td>
</tr>
<tr>
<td>Abstinence</td>
<td>82</td>
<td>0.39</td>
</tr>
<tr>
<td>STI’s/STD’s*</td>
<td>92</td>
<td>0.28</td>
</tr>
<tr>
<td>Masturbation</td>
<td>41</td>
<td>0.50</td>
</tr>
<tr>
<td>Sexual dysfunction*</td>
<td>22</td>
<td>0.42</td>
</tr>
<tr>
<td>Anatomy</td>
<td>94</td>
<td>0.24</td>
</tr>
<tr>
<td>Consent</td>
<td>41</td>
<td>0.50</td>
</tr>
<tr>
<td>Sexual orientation</td>
<td>35</td>
<td>0.48</td>
</tr>
<tr>
<td>Puberty</td>
<td>96</td>
<td>0.20</td>
</tr>
<tr>
<td>Reproduction*</td>
<td>100</td>
<td>0.00</td>
</tr>
</tbody>
</table>

* Topics used to create the four-item measure of perceived sexual health knowledge

In addition to being asked what topics they learned about and felt informed about, participants completed the Sexual Health Knowledge Scale (SHKS). Possible scores on the scale could range from 0 to 10, with a score of 10 indicating that all questions were answered correctly. All ‘I don’t know’ answers were recoded as incorrect. On average, participants answered 4.78 questions correctly, S.D. = 1.77, with a range of 1-9. Though scores varied, many participants answered the same questions incorrectly. Table 4
illustrates the percentages of participants who selected true or false on each of the questions. The correct answer to each question is bolded. In order to compute a perceived knowledge score relevant to the SHKS, the four topics from the list covered in the SHKS were isolated. These topics were contraception, STI’s/STD’s, sexual dysfunction, and reproduction. Scores were computed for each participant to indicate which of the four relevant topics they felt knowledgeable about. Scores on the four item perceived sexual health knowledge (PSHK) measure could range from 0-4 with 4 indicating perceived knowledge in all relevant topics. The mean score of the PSHK was 3.69.

Table 4
Sexual Health Knowledge Scale Questions and Percentage of Participants Responding to Each Answer with Correct Responses in Bold

<table>
<thead>
<tr>
<th>Sexual Health Knowledge Question</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Canadians aged 20 to 24 have had more than one sexual intercourse partner in the past year.</td>
<td>90.9%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Most Canadians aged 20 to 24 used a condom the last time they had sexual intercourse.</td>
<td>38.2%</td>
<td>61.8%</td>
</tr>
<tr>
<td>Plan B, the morning after pill, will not be effective if taken more than 24 hours after unprotected intercourse.</td>
<td>41.8%</td>
<td>58.2%</td>
</tr>
<tr>
<td>The point during a woman’s menstrual cycle in which she is most likely to become pregnant occurs about two weeks before her period begins.</td>
<td>72.7%</td>
<td>27.3%</td>
</tr>
<tr>
<td>Premature ejaculation (coming too soon) is the most common sexual dysfunction among men.</td>
<td>32.7%</td>
<td>67.3%</td>
</tr>
<tr>
<td>The most common sexual dysfunction among women is the persistent inability to have an orgasm during partnered sexual activity.</td>
<td>83.6%</td>
<td>16.4%</td>
</tr>
<tr>
<td>Human papillomavirus (HPV) is the most common sexually transmitted infection in Canada.</td>
<td>52.7%</td>
<td>47.3%</td>
</tr>
<tr>
<td>Most cases of genital herpes transmission occur when the infected partner has no visible symptoms.</td>
<td>70.9%</td>
<td>29.1%</td>
</tr>
</tbody>
</table>
A vaccine is now available to prevent HIV (human immunodeficiency virus). Chlamydia is a sexually transmitted infection that cannot be cured.

<table>
<thead>
<tr>
<th></th>
<th>34.5%</th>
<th>65.5%</th>
<th>38.2%</th>
<th>61.8%</th>
</tr>
</thead>
</table>

**Sexual Inhibition and Sexual Excitation.** Sexual inhibition and sexual excitation were tested using the SESII-W/M. All participants completed the 30-item scale. Two reliability analyses were conducted to determine the accuracy of using all of the inhibition related items as a total inhibition score and all of the excitation related items as an excitation score. The totaled inhibition score included all of the items from the following three factors: Inhibitory Cognitions, Relationship Importance, and Dyadic Elements of the Sexual Interactions. The totaled excitation score included all of the items from the Arousability, Partner Characteristics and Behaviors, and Setting factors. Results of these analyses endorsed measuring inhibition and excitation in this way (inhibition: N of items = 16, $\alpha = .830$; excitation: N of items = 14, $\alpha = .711$). Possible scores on the inhibition scale could range from 16 to 64. Possible scores on the excitation scale could range from 14 to 56. The mean inhibition score $M = 35.82$, $S.D. = 7.12$ and range of 30 (minimum = 22, maximum = 52) suggests that individuals experienced little sexual inhibition but that there was variation between study participants. The mean excitation score $M = 39.78$, $S.D. = 5.01$ and range of 25 (minimum = 26, maximum 51) indicates that there was variation in participants’ levels of sexual excitation.

**Research Question:** Are scores on sex guilt, religiosity, perceived sexual health knowledge, sexual health knowledge, sexual excitation, and sexual inhibition significantly correlated?

**Correlations Between Scales.** Pearson product correlations were calculated for the Revised Mosher Guilt Inventory (RMGI), the Centrality of Religiosity Scale (CRS), the Sexual Inhibition Scale (SIS), the Sexual Excitation Scale (SES), the Sexual Health
Knowledge Scale (SHKS), and the Perceived Sexual Health Knowledge (PSHK) outcomes. Table 5 displays these correlations. Weak positive significant correlations were found between the RMGI and the CRS and between the SES and the PSHK. A weak to moderate negative significant correlation was found between the RMGI and the SES. Neither the SIS nor the SHK were correlated with any of the other scales.

Table 5
Correlations Between Measurement Scales

<table>
<thead>
<tr>
<th></th>
<th>RMGI</th>
<th>CRSI</th>
<th>SES</th>
<th>SIS</th>
<th>SHK</th>
<th>PSHK</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMGI</td>
<td></td>
<td>- .447**</td>
<td>.167</td>
<td>-.240</td>
<td>-.166</td>
<td></td>
</tr>
<tr>
<td>CRSI</td>
<td>.116</td>
<td></td>
<td>-.004</td>
<td>-.025</td>
<td>.104</td>
<td></td>
</tr>
<tr>
<td>SES</td>
<td>-.025</td>
<td>.200</td>
<td></td>
<td>.323*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIS</td>
<td>.091</td>
<td>-.134</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHK</td>
<td>-.052</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at the p < 0.05 level
** Significant at the p < 0.01 level

Correlations Between Questions about Self-Reported Sexual Arousal. A Pearson product correlation analysis was also conducted between the self-reported arousal questions. Table 6 presents the findings from this analysis. Anxiety during the sexually explicit film, continuous peak sexual arousal, self-reported peak sexual arousal, overall physical sexual arousal, desire to have sex with a partner, desire to masturbate, genital tingling, erection rating, and sexual arousal in comparison to that with a partner were all included. Feeling anxious during the sexually explicit video was not correlated with any other outcome variables. Several significant strong, moderate, and weak correlations were found between the other outcome variables.

Correlations Between Scales and Self-Reported Arousal Items. A Pearson product correlation analysis was run between the RMGI, CRS, SES, SHK, and PSHK scales and the self-reported sexual arousal items to determine whether any significant
relationships existed. Results of this analysis can be found in Table 7. Several weak to moderate statistically significant relationships were found.

<table>
<thead>
<tr>
<th></th>
<th>RMGI</th>
<th>CRS</th>
<th>SES</th>
<th>SIS</th>
<th>SHK</th>
<th>PSHK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>.367**</td>
<td>.140</td>
<td>-.208</td>
<td>.343*</td>
<td>-.072</td>
<td>-.118</td>
</tr>
<tr>
<td>Continuous peak</td>
<td>.013</td>
<td>.234</td>
<td>.311*</td>
<td>.098</td>
<td>-.052</td>
<td>-.009</td>
</tr>
<tr>
<td>sexual arousal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discrete peak sexual</td>
<td>.088</td>
<td>.273*</td>
<td>.273*</td>
<td>.091</td>
<td>.074</td>
<td>-.054</td>
</tr>
<tr>
<td>arousal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall physical</td>
<td>.041</td>
<td>.177</td>
<td>.270*</td>
<td>.064</td>
<td>.079</td>
<td>-.061</td>
</tr>
<tr>
<td>sexual arousal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desire to have sex</td>
<td>.020</td>
<td>.148</td>
<td>.294*</td>
<td>-.022</td>
<td>.137</td>
<td>-.077</td>
</tr>
<tr>
<td>with a partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desire to masturbate</td>
<td>-.128</td>
<td>.047</td>
<td>.280*</td>
<td>-.105</td>
<td>-.049</td>
<td>-.074</td>
</tr>
<tr>
<td>Genital tingling</td>
<td>-.013</td>
<td>.113</td>
<td>.334</td>
<td>-.106</td>
<td>-.022</td>
<td>.151</td>
</tr>
<tr>
<td>Erection</td>
<td>.218</td>
<td>.380</td>
<td>.108</td>
<td>.141</td>
<td>.120</td>
<td>-.309</td>
</tr>
</tbody>
</table>

* Significant at the $p < 0.05$ level
** Significant at the $p < 0.01$ level
**Significant at the \( p < 0.01 \) level

<table>
<thead>
<tr>
<th>Anxiety</th>
<th>Continuous peak sexual arousal</th>
<th>Discrete peak sexual arousal</th>
<th>Overall physical sexual arousal</th>
<th>Desire to have sex with a partner</th>
<th>Desire to masturbate</th>
<th>Genital Tingling</th>
<th>Erection rating</th>
<th>Sexual arousal vs. with partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous peak sexual arousal</td>
<td>-.054</td>
<td>.015</td>
<td>-.029</td>
<td>-.119</td>
<td>-.142</td>
<td>-.150</td>
<td>.021</td>
<td>.110</td>
</tr>
<tr>
<td>Discrete peak sexual arousal</td>
<td>.892**</td>
<td>.699**</td>
<td>.730**</td>
<td>.640**</td>
<td>.751**</td>
<td>.581**</td>
<td>.411**</td>
<td></td>
</tr>
<tr>
<td>Overall physical sexual arousal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desire to have sex with a partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desire to masturbate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genital tingling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.611**</td>
</tr>
</tbody>
</table>

**Table 7**

**Correlations Between Self-Reported Sexual Arousal Items**
**Research Question:** Do responses to scales measuring levels of religiosity, sexual guilt, sexual inhibition/sexual excitation, and sexual health knowledge differ significantly by sexual orientation (heterosexual/nonheterosexual), gender (men/women), religiosity (religious/non-religious) or sexual guilt groups (less guilt/more guilt)?

MANOVA tests were run in order to determine whether any statistically significant differences existed between groups on the self-report arousal questions. Gender (male and female), sexual orientation (heterosexual and nonheterosexual), sex guilt (higher and lower) and religiosity (religious, non-religious) were all used as dichotomous independent variables and results from the RMGI, CRS, SES, SIS, SHK, PSHK were used as the dependent variables. Several assumptions were met before performing the MANOVA analyses. First, an acknowledgement of the dependent variable being measured at the continuous level and there being two dichotomous independent variables was made. Second, there was independence of observations. In addition, the data was checked for any significant outliers and an assumption of normality was made.

Table 8 illustrates the results of these analyses. The only significant difference between males and females was for sexual inhibition $F(1, 52) = 9.79, p = .003, \eta^2_p = .16$, with females scoring higher on the inhibition scale on average. Two statistically significant group differences were identified in questionnaire responses on the basis of sexual orientation. A significant difference was found in sexual health knowledge $F(1, 52) = 6.59, p = .013, \eta^2_p = .11$, with nonheterosexual self-identified individuals exhibiting greater knowledge. A group difference was also identified in levels of sex guilt $F(1, 52) = 5.75, p = .020, \eta^2_p = .10$, with heterosexual individuals experiencing more sexual guilt. Research participants were also divided into groups on the basis of having more or less
sex guilt. Those in the lower sex guilt group scored significantly higher on the sexual excitation measure $F(1, 52) = 5.94, p = .018, \eta_p^2 = .10$. Finally, non-religious and religious participants were not statistically significantly different on any measures.
Table 8
MANOVA Results Indicating Differences Between Genders, Orientations, Sex Guilt, and Religiosity on Self-Reported Sexual Arousal Items

<table>
<thead>
<tr>
<th>Gender</th>
<th>Sexual Orientation</th>
<th>Sex Guilt</th>
<th>Religiosity ^</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male (N=25)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female (N = 30)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hetero (N = 37)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonhetero (N = 18)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low guilt (N = 30)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More guilt (N = 24)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-religious (N = 25)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious (N = 29)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>-----</td>
<td>----</td>
<td>-----</td>
</tr>
<tr>
<td>RMGI</td>
<td>55.57</td>
<td>21.37</td>
<td>49.97</td>
</tr>
<tr>
<td>CRS</td>
<td>2.35</td>
<td>0.74</td>
<td>2.19</td>
</tr>
<tr>
<td>SES</td>
<td>39.52</td>
<td>4.74</td>
<td>40.00</td>
</tr>
<tr>
<td>SIS</td>
<td>32.76</td>
<td>6.83</td>
<td>38.37**</td>
</tr>
<tr>
<td>SHK</td>
<td>4.36</td>
<td>1.73</td>
<td>5.10</td>
</tr>
<tr>
<td>PSHK</td>
<td>3.72</td>
<td>0.54</td>
<td>3.67</td>
</tr>
</tbody>
</table>

*Significant at the p < 0.05 level
** Significant at the p < 0.01 level
^ For the sake of analysis, religious and very-religious were totaled as there was only one participant deemed very-religious
Self-Reported Arousal.

**Baseline.** Data was collected from participants after each of the films. The information collected during the second neutral film served as a baseline measure of arousal. This information was collected to verify that baseline levels of sexual arousal were significantly lower than those in response to the stimuli. Repeated measure ANOVAS were computed to confirm that values on the experimental condition were significantly greater than those during the baseline condition (see Table 9). Participants were asked to continuously monitor their sexual arousal with the handheld device during the film. They were also asked to complete a questionnaire immediately after finishing the film. Table 10 demonstrates findings from these questions for the baseline video. Participants reported little sexual arousal, desire, and physical response to the baseline film.

**Experimental Condition.** Participants were asked to answer the same series of questions about arousal after watching the sexually explicit film. Table 9 demonstrates findings from these questions for the experimental condition, or sexually explicit film. As indicated previously, possible responses for each of the questions other than sexual arousal during the video in comparison to sexual arousal with a partner (which ranged from -5 *much less sexually aroused* to +5 *much more sexually aroused* with 0 indicating no difference) ranged from 0-10.

<table>
<thead>
<tr>
<th>Outcome Variable</th>
<th>DF</th>
<th>F</th>
<th>p</th>
<th>Wilk’s Λ</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>(1, 54)</td>
<td>4.10</td>
<td>.048</td>
<td>.929</td>
<td>.07</td>
</tr>
<tr>
<td>Peak continuous sexual arousal</td>
<td>(1, 53)</td>
<td>432.36</td>
<td>&lt;.001</td>
<td>.109</td>
<td>.89</td>
</tr>
<tr>
<td>Peak discrete sexual arousal</td>
<td>(1, 54)</td>
<td>386.24</td>
<td>&lt;.001</td>
<td>.123</td>
<td>.88</td>
</tr>
<tr>
<td>Overall physical sexual arousal</td>
<td>(1, 54)</td>
<td>327.28</td>
<td>&lt;.001</td>
<td>.142</td>
<td>.86</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------</td>
<td>--------</td>
<td>-------</td>
<td>------</td>
<td>-----</td>
</tr>
<tr>
<td>Desire to have sex with a partner</td>
<td>(1, 54)</td>
<td>303.87</td>
<td>&lt;.001</td>
<td>.151</td>
<td>.85</td>
</tr>
<tr>
<td>Desire to masturbate</td>
<td>(1, 54)</td>
<td>147.39</td>
<td>&lt;.001</td>
<td>.268</td>
<td>.73</td>
</tr>
<tr>
<td>Genital tingling (females)</td>
<td>(1, 29)</td>
<td>173.35</td>
<td>&lt;.001</td>
<td>.143</td>
<td>.86</td>
</tr>
<tr>
<td>Erection rating (males)</td>
<td>(1, 24)</td>
<td>66.72</td>
<td>&lt;.001</td>
<td>.265</td>
<td>.74</td>
</tr>
<tr>
<td>Sexual arousal comparison to with a partner</td>
<td>(1, 54)</td>
<td>182.96</td>
<td>&lt;.001</td>
<td>.228</td>
<td>.77</td>
</tr>
</tbody>
</table>

Table 10
Means and Standard Deviations of Self-Reported Sexual Arousal on a Scale from 0-10 for all Participants During Baseline and Experimental Conditions

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>S.D.</td>
<td>N</td>
<td>M</td>
<td>S.D.</td>
</tr>
<tr>
<td>Anxiety</td>
<td>55</td>
<td>1.09</td>
<td>1.38</td>
<td>55</td>
<td>1.60</td>
<td>1.76</td>
</tr>
<tr>
<td>Peak continuous sexual arousal</td>
<td>54</td>
<td>0.37</td>
<td>0.65</td>
<td>54</td>
<td>5.96</td>
<td>2.12</td>
</tr>
<tr>
<td>Peak discrete sexual arousal</td>
<td>55</td>
<td>0.64</td>
<td>0.95</td>
<td>55</td>
<td>5.85</td>
<td>1.98</td>
</tr>
<tr>
<td>Overall physical sexual arousal</td>
<td>55</td>
<td>0.53</td>
<td>0.81</td>
<td>55</td>
<td>5.29</td>
<td>2.05</td>
</tr>
<tr>
<td>Desire to have sex with a partner</td>
<td>55</td>
<td>0.65</td>
<td>1.42</td>
<td>55</td>
<td>6.45</td>
<td>2.49</td>
</tr>
<tr>
<td>Desire to masturbate</td>
<td>55</td>
<td>0.33</td>
<td>0.88</td>
<td>55</td>
<td>5.27</td>
<td>3.04</td>
</tr>
<tr>
<td>Genital tingling (females)</td>
<td>30</td>
<td>0.87</td>
<td>0.97</td>
<td>30</td>
<td>4.83</td>
<td>2.18</td>
</tr>
<tr>
<td>Erection rating (males)</td>
<td>25</td>
<td>0.20</td>
<td>0.50</td>
<td>25</td>
<td>4.32</td>
<td>2.43</td>
</tr>
<tr>
<td>Sexual arousal comparison to with a partner</td>
<td>55</td>
<td>-4.35</td>
<td>1.09</td>
<td>55</td>
<td>-1.4</td>
<td>1.74</td>
</tr>
</tbody>
</table>

**Research Question:** Do responses to items measuring self-reported sexual arousal differ significantly by sexual orientation (heterosexual/nonheterosexual), gender (men/women), religiosity (religious/non-religious) or sexual guilt groups (less guilt/more guilt)?

A number of MANOVA operations were conducted to determine whether groups were statistically significantly different on the outcome measures. All of the assumptions made for the previous research were again checked for this question. Results of these operations are presented in Table 11. No significant differences in self-reported arousal were identified between genders or between sexual orientations. The only statistically
significant difference occurred between those categorized as having lower guilt and those categorized as having higher guilt and was related to level of anxiety during the sexually explicit film \( F(1) = 6.13, p = .017, \eta^2_p = .11 \), with those reporting more guilt experiencing higher levels of anxiety. Finally, several statistically significant differences were found between those who were classified as non-religious and those classified as religious. Differences existed for peak sexual arousal on the continuous measure \( (F(1) = 5.17, p = .027, \eta^2_p = .09) \), peak sexual arousal on the discrete measure \( (F(1) = 7.94, p = .007, \eta^2_p = .13) \), desire to have sex with a partner \( (F(1) = 4.80, p = .033, \eta^2_p = .08) \), and erection rating \( (F(1) = 4.94, p = .037, \eta^2_p = .18) \), with those classified as religious experiencing higher levels for all these variables.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>1.58</td>
<td>1.50</td>
<td>1.67</td>
<td>1.93</td>
<td>1.95</td>
<td>1.75</td>
<td>0.94</td>
<td>1.64</td>
<td>1.10</td>
<td>1.61</td>
<td>2.24*</td>
<td>1.76</td>
<td>1.31</td>
<td>1.62</td>
<td>1.93</td>
<td>1.86</td>
</tr>
<tr>
<td>S.D.</td>
<td>5.83</td>
<td>2.06</td>
<td>6.07</td>
<td>2.20</td>
<td>6.03</td>
<td>2.13</td>
<td>5.82</td>
<td>2.16</td>
<td>5.62</td>
<td>2.09</td>
<td>6.36</td>
<td>2.12</td>
<td>5.31</td>
<td>2.22</td>
<td>6.57*</td>
<td>1.85</td>
</tr>
<tr>
<td>Continuous peak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>5.71</td>
<td>2.03</td>
<td>5.90</td>
<td>1.95</td>
<td>5.89</td>
<td>1.88</td>
<td>5.65</td>
<td>2.21</td>
<td>5.41</td>
<td>1.94</td>
<td>6.28</td>
<td>1.95</td>
<td>5.08</td>
<td>2.00</td>
<td>6.50*</td>
<td>1.71</td>
</tr>
<tr>
<td>S.D.</td>
<td>4.88</td>
<td>2.03</td>
<td>5.50</td>
<td>1.98</td>
<td>5.23</td>
<td>1.89</td>
<td>5.18</td>
<td>2.30</td>
<td>4.97</td>
<td>2.18</td>
<td>5.52</td>
<td>1.78</td>
<td>4.88</td>
<td>2.21</td>
<td>5.54</td>
<td>1.77</td>
</tr>
<tr>
<td>Discrete peak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>6.46</td>
<td>2.54</td>
<td>6.33</td>
<td>2.44</td>
<td>6.57</td>
<td>2.42</td>
<td>6.00</td>
<td>2.57</td>
<td>6.00</td>
<td>2.65</td>
<td>6.84</td>
<td>2.19</td>
<td>5.65</td>
<td>2.65</td>
<td>7.07*</td>
<td>2.09</td>
</tr>
<tr>
<td>S.D.</td>
<td>5.13</td>
<td>3.03</td>
<td>5.23</td>
<td>3.00</td>
<td>5.19</td>
<td>3.03</td>
<td>5.18</td>
<td>3.03</td>
<td>4.93</td>
<td>2.98</td>
<td>5.48</td>
<td>3.06</td>
<td>4.73</td>
<td>2.71</td>
<td>5.61</td>
<td>3.24</td>
</tr>
<tr>
<td>Overall physical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>4.93</td>
<td>2.25</td>
<td>4.73</td>
<td>2.19</td>
<td>4.72</td>
<td>2.16</td>
<td>5.00</td>
<td>2.30</td>
<td>4.65</td>
<td>2.25</td>
<td>5.14</td>
<td>2.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.D.</td>
<td>4.32</td>
<td>2.40</td>
<td>4.33</td>
<td>3.21</td>
<td>3.83</td>
<td>2.62</td>
<td>4.77</td>
<td>2.24</td>
<td>3.00</td>
<td>2.26</td>
<td>5.2*</td>
<td>2.18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at the p < 0.05 level
** Significant at p < 0.01 level

^ For the sake of analysis, the categories ‘religious’ and ‘very-religious’ were combined as there was only one participant identified as ‘very-religious’
Research Question: Do sex guilt, religiosity, perceived sexual health knowledge, sexual health knowledge, sexual excitation, and sexual inhibition predict self-reported sexual arousal, desire, and physical response outcomes to a sexual stimulus?

In order to determine the impact of the predictor variables on the outcome variables a number of regression analyses were conducted. Normality for all scales was established by verifying skewness and kurtosis statistics before conducting the regression analyses. Since normality was established, parametric tests were deemed appropriate for data analysis. Durbin-Watson statistics were computed for each of the regressions to determine whether there was independence of residuals. Statistics ranged from 1.75 to 2.24 confirming that linear regression is appropriate. As no casewise diagnostics were produced, the data was determined not to have any outliers. Visual inspection of a plot of standardized residuals versus standardized predicted values for each of the regressions indicated that there was homoscedasticity for each test. Finally, residuals were normally distributed as assessed by visual inspection of a normal probability plot for each test.

Stepwise linear regressions were conducted for each outcome variable. Gender and sexual orientation were entered in block 1, Sexual Excitation Scale (SES) in block 2, Centrality of Religiosity Scale (CRS) in block 3, Revised Mosher Guilt Inventory (RMGI) in block 4, Sexual Inhibition Scale (SIS) in block 5, and Sexual Health Knowledge (SHK) and Perceived Sexual Health Knowledge (PSHK) in block 6. The models predicting continuous peak sexual arousal, discrete peak sexual arousal, desire to masturbate, desire to have sex with a partner, overall physical arousal, sexual arousal in contrast to typical sexual arousal with a partner, erections, and genital tingling were not statistically significant. The only model that was statistically significant examined whether the predictor variables significantly predicted anxiety during the sexually explicit video. Models 5 and 6 were statistically significant ($p = .013$ and $p =$
.043 respectively). $R^2$ values for the models (.281 and .283) indicate that 28.1% of anxiety during the film was explained by model 5 and 28.3% of anxiety during the film was explained by model 6. When examining the coefficients table, only sexual inhibition was identified as a statistically significant predictor with greater sexual inhibition predicting higher levels of anxiety during testing.

Table 12

<table>
<thead>
<tr>
<th>Block</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>B</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>.28</td>
<td>.19</td>
<td>Gender</td>
<td>.26</td>
<td>.51</td>
<td>.61</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Orientation</td>
<td>-1.04</td>
<td>.54</td>
<td>-1.92</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SE</td>
<td>-.02</td>
<td>.05</td>
<td>-.431</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CRS</td>
<td>.23</td>
<td>.35</td>
<td>.66</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RMGI</td>
<td>.02</td>
<td>.02</td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SI</td>
<td>.08</td>
<td>.03</td>
<td>2.32</td>
</tr>
<tr>
<td>6</td>
<td>.28</td>
<td>.16</td>
<td>Gender</td>
<td>.26</td>
<td>.53</td>
<td>.49</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Orientation</td>
<td>-1.10</td>
<td>.57</td>
<td>-1.92</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SE</td>
<td>-.03</td>
<td>.05</td>
<td>-.48</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CRS</td>
<td>.22</td>
<td>.36</td>
<td>.63</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RMGI</td>
<td>.02</td>
<td>.02</td>
<td>1.11</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SI</td>
<td>.08</td>
<td>.04</td>
<td>2.26</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SHK</td>
<td>.05</td>
<td>.13</td>
<td>.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PSHK</td>
<td>.08</td>
<td>.40</td>
<td>.21</td>
</tr>
</tbody>
</table>
Discussion

Summary of Findings

The overall aim of the present study was to determine whether self-reported sexual arousal (arousal, desire, and physical response) to a sexually explicit stimulus could be predicted by attitudinal, religion-related, and knowledge variables. In order to test this, 55 individuals aged 18-42 visited the Psychophysiology of Sexual Health Lab at the University of Guelph for one testing session where they completed a number of surveys and watched a series of films during which they continuously reported their level of sexual arousal. While sexual response was not successfully predicted by responses on the scales examined, a number of other significant and surprising outcomes were identified relevant to the other research questions.

Group Differences on Questionnaires

First, some compelling findings arose when examining group differences, particularly in responses to the various scales. Prior research has emphasized that females generally experience greater levels of sex related guilt than males, however, this was not replicated in the current study. Early studies that included both men and women found that men experienced less sex guilt (Mosher, 1979; Daugherty, 1984). In their meta-analysis, Allen and colleagues (2007) discussed gender role differences as a potential explanation for different reactions to sexually explicit materials. They postulated that since men are socialized as sexual beings and female sexuality has historically been discouraged, affective feelings towards sex are divergent. The researchers pointed to the fact that historically, males experienced greater privilege when responding to arousing materials. They argue that social roles and norms may cause females to feel greater guilt in relation to sexual stimulus (Allen et al., 2007). It is possible that there has been a shift in social norms over the past 30+ years that could be accounting for the lack of significant
differences in levels of sex guilt between men and women in this study as compared to previous research. Indeed, Parker (2012) highlighted that social movements in the 21st century are quicker to respond to issues than previous generations and the recognition of sexual rights by the World Health Organization in 2002 has facilitated more open discussion of sexual pleasure as a basic right for all people. These societal advances in sexuality could have facilitated more positive attitudes towards sexuality within this study’s sample of women as compared to earlier research, particularly given the overall high levels of sexual guilt. It is also possible that the large variation of sexual orientation of females but not of males in the present study could have impacted levels of sexual guilt. Those individuals who do not identify as heterosexual are likely more liberal in their attitudes towards sexuality and may experience less guilt because of this (Lapinski & Mckirnan, 2013). More recent studies of sex guilt, which have focused solely on female participants, generally found greater diversity in levels of guilt than in the present study (Woo et al., 2011; Morokoff, 1985; Woo et al., 2012; Abdolsalehi-Najafi & Beckman, 2013). This may be due to the nature of the studies since data collection for those studies was based solely on retrospective questionnaire responses without the presence of a sexual stimulus, whereas this study’s participants were asked to visit the laboratory for testing. The instrumentation used in the present study and having participants visit a laboratory and undress, also reasonably skews the sample as those individuals with higher sex guilt may not have been comfortable participating. Additionally, the more recently published studies on sex guilt focused largely on cross-cultural comparisons whereas the current sample was not ethnically diverse. Within this study, the sample consisted primarily of White identified individuals with English as a mother tongue, and it is possible that the experiences of these participants were quite different than those from previous studies. A more ethnically diverse sample may have produced a broader spectrum of
sex guilt. It is also conceivable that the overall high education level of the sample impacted research outcomes as higher levels of education have been associated with more open attitudes towards sexuality (Mercer et al., 2013), which by extension, could result in less sex guilt.

Consistent with prior research, female participants in the present study did experience statistically significant greater sexual inhibition than male participants (Bancroft et al., 2009). Though in Milhausen and colleagues (2010)’s development of the SESII-W/M did not group factors to create a single Sexual Excitation or Sexual Inhibition score, female participants scored higher on the measures of inhibition (Inhibitory Cognitions, Relationship Importance, Partner Characteristics and Behaviors, and Dyatic Elements of the Sexual Interaction) and male participants scores higher on the measures of excitation (Arousability and Setting). Their second study tested the measure on a sample of undergraduate students and found the same pattern of gender differences across each of the factors (Milhausen et al., 2010). In the present study, neither male participants nor female participants experienced high levels of sexual inhibition in general. Again, this can conceivably be attributed to the nature of the current study and the implausibility of very inhibited individuals wanting to participate. Though gender and inhibition were related, the same cannot be said about sexual excitation. No significant differences in levels of sexual excitation were found. Mean excitation scores were actually very similar between males and females, $M = 39.52$ and $M = 40.00$ respectively. This finding contrasts that of Milhausen and colleagues (2010) where male participants reported higher scores on the sexual excitation factors of the SESII-W/M. The present sample may have been more prone to sexual excitation overall leading them to volunteer as participants.

Two significant group differences were found based on sexual orientation categories. Heterosexual participants reported significantly greater sex guilt than did nonheterosexual
participants. As the relationship between sex guilt and sexual orientation has not been studied previously, it is difficult to determine why this distinction occurred. It may be that individuals classified as sexual minorities experienced greater stigma and discrimination surrounding their sexuality and have become more aware of themselves as sexual beings. Nonheterosexual individuals have historically been discriminated against and may have engaged in greater reflection and dialogue surrounding sex (Denton, Rostosky, & Danner, 2014). It is conceivable that the individuals identified as nonheterosexual in the present study are part of a community that celebrates sexuality more than that of heterosexual individuals. Several of the sex guilt questionnaire items in particular would likely be interpreted differently based on sexual orientation. For instance, ‘sex should be saved for wedlock and childbearing’ and ‘unusual sex practices are OK as long as they’re heterosexual’ would carry different meanings for individuals to whom sex is not about procreation and who do not identify as heterosexual.

A significant difference in level of sexual health knowledge was also found on the basis of sexual orientation; however, no differences were found in perception of sexual health knowledge. As in the relationship between sex guilt and sexual orientation, the relationship between sexual health knowledge and sexual orientation has not been studied empirically. While sexual experience was not measured within the present study, nonheterosexual individuals, through the nature of their sexual identity, have likely engaged in less heteronormative sexual activities than the heterosexual identified participants. Perhaps the nonheterosexual individuals in this study, due to their sexual minority status, have done more exploration of sexuality and have engaged in more dialogue about sex leading to a better grasp on sexual health issues. Research has shown that physical and mental health disparities exist between heterosexual and LGB individuals such that LGB individuals experience more stigma and barriers to obtaining
care (Institute of Medicine, 2011). As such, it is plausible that these individuals may have taken their sexual health concerns into their own hands and conducted research and exploration beyond that conducted by heterosexual individuals.

The only significant group difference on the questionnaires based on sex guilt was related to sexual excitation. Participants in the low sex guilt group reported greater sexual excitation than those in the higher guilt group. Given the significant negative correlation between sex guilt and sexual excitation, this finding is not surprising. On the contrary, and perhaps due to the small sample size, no significant difference was found in level of sexual inhibition. As expanded previously, and most likely due to the nature of the study, high levels of sexual inhibition were not identified in the sample.

Finally, and contrary to prior research, no significant group differences on the sex guilt, perceived sexual health knowledge, sexual health knowledge, sexual excitation, and sexual inhibition questionnaires were found on the basis of religiosity. Past research has argued that an enduring relationship exists between religiosity and sexual attitudes. Researchers have contended that individuals to whom religion is more salient generally have more conservative attitudes towards sexuality which would lead to greater endorsement of higher guilt statements (Kinsey et al., 1953; Lefokowitz et al., 2004; Beckwith & Morrow, 2005; Ahrold et al., 2011). Though the number of religious and non-religious individuals in the current sample was nearly evenly split, no significant differences were found on any of the predictor variables. The dissemblance to prior research may be due to the fact that the categorization of ‘religious’ used in the present study expanded past adherence to monotheistic religions. Spirituality, monotheism, and polytheism were all captured by the measure of religiosity used in this study. As the measure provided more complexity to religion than a measure of church attendance would have for
example, it is possible that individuals who would not have been grouped as ‘religious’ in a more simplistic measure were within this study.

**Group Differences on Self-Reported Sexual Response**

An analysis of the impact of group differences on self-reported sexual response was also conducted. Contrary to prior research and to predictions for this study, no significant differences in self-reported sexual arousal were found between men and women. It has historically been widely accepted that men experience greater self-reported sexual arousal in response to sexual stimuli in laboratory studies than women (Peterson & Janssen, 2007; Steinman, Wincze, Sakheim, Barlow, & Mavissakalian, 1981). The finding that there were no gender differences in the present study goes against these prior and established findings and ideas. One recent study examining male and female self-reported and physiological sexual arousal to male-oriented and female-oriented sexual stimuli did indicate that the gendered patterns of response found in the past may be changing. Landry and colleagues (in press) found that while male and female study participants did experience increased physiological sexual arousal to both male and female-oriented sexually explicit films, there were no significant differences between men and women for the type of stimuli used. Furthermore, women reported greater increases in self-reported sexual arousal over time than men. Both the present study and this study were conducted in Canada among primarily White/European individuals. Differences between these and previous studies may be due to possible cultural differences between Canada and the United States with Canadians generally endorsing more liberal attitudes towards sexuality related issues (Andersen & Fetner, 2008). It is also conceivable that differences may be due to an increase in the comfort of female participants with sexually explicit materials over time (Smith, 2007).
No group differences in sexual arousal based on sexual orientation were found in the present study. This is especially notable when considering that all participants were shown the same heterosexual sexually explicit video. There has, in the past, been an effort to provide sexual psychophysiology participants with expected preferred stimuli when trying to elicit a sexual response in the lab. Participants in the current study all indicated that they would be aroused by the heterosexual stimulus. During the screening process, no participants indicated that they felt that they would not be aroused because of the nature of the stimulus, furthermore, only one participant explained that they did not think they would be sexually aroused by any sexually explicit materials, regardless of content. Though it is unlikely that all individuals are aroused by all sexually explicit videos, it is conceivable that sexual orientation and particularly what sexual stimuli that individuals find arousing is more fluid and less categorical than previously theorized. Carvalho and colleagues (2013) considered what elements of sexually explicit films individuals found arousing and determined that within different stimuli, the greatest predictor of arousal was sexually explicit content and not romantic content. Additionally, research has shown that high intensity sexual activities, specifically penile-vaginal intercourse, illicit greater sexual response (Both et al., 2005). The film used in this study featured a couple that was undressed and engaged in sexual activities rather than romantic activities (such as kissing and cuddling) from the very beginning of the film. This may have been responsible for high levels of reported sexual arousal across sexual orientations. It is also important to note that the male participants in the current study were nearly exclusively heterosexual and it is possible that the fluidity found for nonheterosexual females would not be replicated in a more diverse sample of males. Previous psychophysiology research has argued that males are more category specific and thus would be
aroused by a heterosexual stimulus but perhaps not be a homosexual stimulus (Chivers, 2010; Rieger, Chivers, & Bailey, 2005).

Individuals with less sex guilt did not differ significantly from individuals with more sex guilt on any of the measures of sexual response used in this study. Sex guilt has been linked to sexual functioning in the past with greater guilt relating to diminished functioning (Cado & Leitenberg, 1990; Darling, Davidson, & Passarello, 1992). Self-reported arousal in particular has been reported as lower in individuals who experience more guilt. None of the group differences in sexual arousal were significant in the present study, which is contrary to previous research. The lack of significant differences may be used to the median split used to create the guilt groups. Within this study, those individuals classified as more guilty still scored within the lower third of the possible range of guilt scores, which indicates on the whole that the sample was experiencing low levels of sexual guilt. That being said, level of self-reported anxiety during the stimulus was also measured and those individuals with more sex guilt reported higher levels of anxiety. This is unsurprising when contextualized within the laboratory setting. It is likely that those individuals who reported experiencing higher levels of sex guilt would also be more distracted in the examination room and may have had more trouble focusing on the stimulus. Information Processing Theory can be used to explain this occurrence; those individuals who were higher in sex guilt likely would have appraised the stimulus as primarily less sexual than those in the lesser guilt group and therefore been more distracted. Therefore, they would have had greater awareness of the experimental content, which may have elevated levels of anxiety (Janssen et al., 2000). Participants were asked to rank how anxious they felt during the video between 0-10 and while a significant difference in anxiety level between guilt groups was identified, mean levels of anxiety for both groups were low (low guilt $M = 1.10$, higher guilt $M =$
Whereas few differences were identified in sexual response on the basis of gender, sexual orientation, and level of sex guilt, several group differences were found based on the level of religiosity of participants. One of the most unexpected outcomes of the present study is that those individuals who identified as more religious indicated experiencing higher continuous peak sexual arousal, higher discrete peak sexual arousal, more desire to engage in sex with a partner and, for males, more rigid erections. Existing research on religiosity and sexual behaviors has argued that higher religiosity is linked to more conservative attitudes and less engagement in sexual behavior (Luquis et al., 2012). It may be that the measure of religiosity used in the present study could account for these discrepant findings. The Centrality of Religion Scale encompasses formal religious practices as well as private spiritual rituals in comparison to previous research that has largely defined religiosity on the basis of adherence to specific religious practices such as church attendance (Huber & Huber, 2012). Only 14.5% of this sample identified as Christian and several participants within the ‘religious’ category defined their religious affiliation as ‘spiritual’ with many indicating that they meditated regularly. It is possible that the spiritual practices of these participants in the religious category made them more aware and embracing of the sexual stimulus than those in the less religious group. Indeed, research examining the impact of a mindfulness-based therapeutic intervention of Female Sexual Arousal Disorder (FSAD) demonstrated improvements in the relationship between self-reported and physiological sexual arousal in women received mindfulness based treatment (Brotto, Chivers, Millman, & Albert, 2016). That is, mindfulness practices may have enhanced research participant awareness of their physiological genital arousal, which could have encouraged increased self-reported sexual arousal.
Impact on Self-Reported Sexual Response

Based on prior research it was believed that arousal, desire, and physical response outcomes to a sexual stimulus could be predicted by examining levels of sex guilt, religiosity, sexual inhibition, sexual excitation, and sexual health knowledge (Perez et al., 2006; Morokoff, 1985; Kuffel & Heinman, 2006; Middleton et al., 2008). Thus, the finding that none of our self-reported measures of sexual arousal were statistically significantly predicted was unexpected. Furthermore, not only were all of the complete models non-significant, but also none of the individual total scale variables significantly predicted any of the outcomes. As the present study had a small sample size of only 55 participants and there were several variables used in each of the regressions, it is possible that a statistically significant relationship with a significant effect size may have been found if the statistical power had been greater. While the size of the current sample may be partially responsible for the lack of statistical significance, it is unlikely to be the sole explanation. Being mindful of the sample, it is possible that those individuals who volunteered to visit the laboratory and be part of the study were generally more comfortable with their sexuality and thus would not have experienced the same response as individuals who would have been too uncomfortable to visit the lab, undress from the waist down, and watch the sexually explicit stimuli.

Though anxiety during the experimental condition was not one of the original outcome variables of interest, it was the only outcome to be statistically significantly explained by any of the predictor variables. Anxiety during the experimental condition was predicted by sexual inhibition. Sexual inhibition, which is made up of feelings of worry, self-consciousness in sexual situations, and relationship concerns (Bancroft & Janssen, 2000), would likely lead to participants with higher levels of sexual inhibition feeling more anxious about experiencing
sexual arousal in a laboratory setting. Several items on the Sexual Inhibition Scale such as ‘sometimes I have so many worries that I am unable to get aroused’ and ‘unless things are “just right” it is difficult for me to become sexually aroused’ are linked to worries and preoccupations during sexual encounters, which could conceivably translate to higher levels of anxiety during the sexual stimulus. Further, having an experimenter remotely monitoring the experiment throughout the sexual stimulus could create higher levels of anxiety for those individuals with greater inhibition.

**Information Processing Theory**

Based on the Information Processing Theory, it was expected that participants who experienced higher levels of sexual inhibition and greater sexual guilt would be less responsive to the sexual stimulus. It was expected that those participants would appraise the sexual stimuli as primarily non-sexual and experience lower levels of sexual arousal and genital response (Janssen et al., 2000). In contrast, we predicted that those participants who experienced less sex guilt and greater sexual excitation would appraise the stimulus as primarily sexual and sexual meaning processing and genital response would be triggered (Janssen et al., 2000). As predicted, correlation analyses demonstrated significant positive relationships between sexual excitation and continuous peak sexual arousal, discrete peak sexual arousal, overall physical sexual arousal, desire to have sex with a partner, and desire to masturbate, suggesting that individuals with higher sexual excitation might be experiencing the stimuli as more sexual and more arousing than those with lower levels of sexual excitation.

One laboratory study of 47 psychology students in which participants were shown either a neural stimulus or a sexually explicit stimulus found that participants who viewed the sexually explicit stimulus were more likely to engaged in sexual activity following the laboratory visit.
than those shown the neutral stimulus (Both, Spiering, Everaerd, & Lann, 2004). Based on the IPT, it is probable that participants shown the sexual stimulus appraised it as such and therefore were primed to react physically. In the context of the present study, higher sexual excitation scores were correlated with desire to have sex with a partner and with desire to masturbate. These participants were likely more readied to engage in sexual behaviors after watching the video than those participants who had lower sexual excitation scores (Janssen et al., 2000). Sexual excitation was surprisingly not related to both of the self-reported physiological measures of sexual response (genital tingling and erections). Additionally sexual excitation did not predict sexual arousal within the regression models, which might indicate that although a significant correlational relationship does exist, the predictive potential of sexual excitation may be mediated by another variable such as sexual attitudes or prior behaviors. Past sexual experiences have been demonstrated as important to the propensity for sexual excitation and should be examined further within sexual attitude and arousal research (Milhausen, 2010). It cannot be discounted, however, that the small sample size may have limited the power to examine this predictive relationship.

Sexual inhibition and sex guilt were both surprisingly unrelated to every outcome variable other than anxiety. While the relationship of sexual inhibition and guilt to anxiety in response to a sexual stimulus fits in within the IPT, the lack of any significant predictive relationship to sexual arousal is likely due to the low levels of sexual inhibition and guilt within this sample as well as the relatively small sample size.

**Dual Control Model**

As in the Information Processing Theory, the Dual Control Model would also suggest that participants who experience greater sexual excitation would be more responsive to a sexual
stimulus and that participants who experience greater sexual inhibition would be less responsive to the stimulus. In the present study, as explained previously, sexual excitation was positively correlated with continuous peak sexual arousal, discrete peak sexual arousal, overall physical sexual arousal, desire to have sex with a partner, and desire to masturbate. In contrast, sexual inhibition was not significantly correlated with any of the sexual response outcome variables. This may have been due to the fact that participants did not report very high sexual inhibition. These results are salient when considering that Bancroft and Janssen (2000) argue that sexual inhibition and sexual excitation are relatively stable and enduring characteristics in individuals. Those individuals who have a greater propensity for sexual excitation may experience more arousal and desire in general. Though a relationship between these variables was found, they were not successful in predicting sexual arousal to an erotic stimulus. Future research should consider whether past sexual behaviors and experiences are related to sexual inhibition and predictive of sexual arousal. Consistent with prior research, female participants in the present study scored significantly higher on the sexual inhibition measure than did male participants, and males scored higher on sexual excitation than females (Mark, Milhausen, & Maitland, 2013; Rettenberger, Klein, & Briken, 2016).

**Strengths**

The present study has many strengths; the design and implementation of the research are particularly concrete examples of these strengths. Sampling within the community provided some variation in individuals beyond the scope of an undergraduate sample. First, the sample was nearly evenly split between males and females, which many other studies of sex guilt and attitudes towards sexuality have not done (Woo et al., 2011; Morokoff, 1985; Woo, et al., 2012; Abdolsalehi-Najafi & Beckman, 2013. Second, the study was conducted with a more diverse
sample on the basis of age sexual orientation, and occupation than most previous studies using self-reported measures of arousal (Morton & Gorzalka, 2013; Woo et al., 2011; Abdolsalehi-Najafi & Beckman, 2013). Many of these have focused strictly on undergraduate student populations or on clinical population and therefore the results of the present study may have a broader application. Finally, although all participants were presented with a heterosexual sexually explicit video, all interested individuals were given an opportunity to self-identify whether or not they expected that they would be aroused by the video. No assumptions were made about what sexually explicit video content would be arousing on the basis of sexual orientation. Within this study, though sexual orientation was dichotomized for the purpose of statistical analysis, an understanding of the fluidity of sexual orientation and sexual attraction is present. It is not enough to assume that heterosexual individuals would only be most aroused by heterosexual videos and that nonheterosexual individuals would only be most aroused by gay or lesbian explicit videos. Future studies should take this into consideration when selecting participants and be careful not to group participant interests without asking them.

Using both a continuous and a discrete measure of self-reported sexual arousal also strengthened the study. Participants were able to continuously rate their level of sexual arousal while watching the videos and were able to answer a number of more specific questions about their sexual arousal after finishing each video. By measuring arousal continuously, the potential risks accompanying retrospective data were minimized. Though participant ratings on both measures were highly significantly correlated \( r = .892, p < .001 \), each measure offers valuable information. The continuous measure of self-reported arousal allows for an exploration of the participant’s arousal pattern, and although not part of this analysis, will be conducted at a later time. It makes it possible to measure arousal over time and to examine which parts of the
stimulus participants found most arousing. It also makes it possible to examine the relationship between self-reported and physiological arousal in individuals (Kukkonen, 2015). The discrete measure of arousal allows for introspective questions that would be too distracting for participants to answer while watching the videos (Clifton, Seehuus, & Rellini, 2015).

**Limitations**

While this study does present several strengths, it also has several limitations that must be acknowledged. First, while the sample was varied on the basis of gender, sexual orientation, and age, other demographic factors such as ethnic background and level of education were very homogeneous with participants being highly educated and primarily identifying as White/European descent. Perhaps having more variation in the sample on the basis of demographic information would have resulted in more variation on both the predictor and outcome variables. Additionally, though some variation was found in levels of sex guilt, sexual excitation, and sexual inhibition, participants did not score equally on both ends of the scales. Many participants reported experiencing low levels of sexual guilt, low levels of sexual inhibition, and medium levels of sexual excitation. This is likely due to the nature of the study, which asked participants to visit the lab in person and undress from the waist down. While using an experimental condition certainly strengthened the validity of the results, a less invasive approach likely would have encouraged a greater number of participants with more varied attitudes. Furthermore, the sample was relatively small, particularly when considering the number of predictor variables and outcome variables considered.

**Research Applications and Areas of Future Research**

One very interesting and unexpected finding that came out of the study was the large disparity between perceived sexual health knowledge and tested sexual health knowledge. While
participants reported being very knowledgeable, their scores on the true or false scale did not confirm this expectation. Furthermore, most (n = 49) participants reported receiving some formal sexual education. This is concerning considering how little knowledge was demonstrated through the survey. Though reforms have recently been made to Ontario’s sexual health education curriculum (Government of Ontario, 2015) it is important to determine whether students are retaining correct information. If individuals believe themselves to be knowledgeable but are not equipped with the right information then it is very possible for them to be at risk and apply their misinformation to their sexual encounters and activities. In the present study a great lack of knowledge was demonstrated towards STIs and sexual dysfunctions.

Participants were asked to indicate how sexually aroused they felt during each of the videos in comparison to how sexually aroused they typically are with a partner. As predicted, participants indicated feeling much less aroused during the baseline video than with a partner. While participants’ arousal comparison increased during the experimental condition, participants still rated their sexual arousal as less than it typically would be with a partner. Future research should emphasize that while sexual stimuli in a laboratory setting does elicit a sexual response, this response is laboratory induced and likely not as strong as in a natural setting. If the focus is on maximizing sexual response, future research should consider allowing participants to bring their own stimulus to the lab.

Accounting for physiological arousal within the study design would ameliorate future research focusing on the impact of attitudinal, guilt, and religiosity factors on sexual response. Though the primary research question was non-significant in the current study, the predictor variables may have significantly impacted physiological arousal. Using a physiological measure as well as a continuous measure of arousal would allow for comparison and also to verify
whether individuals’ self-reported arousal and physiological response are aligned. The relationship between sexual orientation and sex guilt, sexual inhibition, and sexual excitation should be studied at length. While this study demonstrated significant group differences, future research should aim to explain the reasons for these differences and provide a more nuanced understanding of the interaction between these variables.

Subsequent research studies examining similar factors should be very attentive when selecting a sample. As explained previously, interested participants should be provided with the opportunity to self-identify what materials they believe would be arousing. Research would also benefit from asking about prior exposure to sexually explicit materials and frequency of sexual behaviors. In the context of the present study, several interested individuals were excluded from participating because of medication use. Interested individuals who were taking SSRI and SNRI medications were excluded for potential drug interactions with sexual arousal and desire (see Clayton, Croft, & Handiwala for a review of this relationship). Future research should consider whether these individuals differ significant in any way from those who are not taking any medications as they appear to make up a sizeable portion of people interested in participating in this type of research.

**Conclusion**

In summary, this research sought to examine whether sexual response outcomes (arousal, desire, physical genital response) could be predicted by a number of attitudinal, religiosity, knowledge, and sex guilt factors. Though the 55 participants’ sexual response to a sexual stimuli in the psychophysiology laboratory was not predicted by sex guilt, religion, sexual inhibition, sexual excitation, sexual health knowledge, and perceived sexual health knowledge, some other interesting findings arose. Contrary to what previous research suggested there no significant
group differences in the predictor scales on the basis of gender, however, differences were found on the basis of sexual orientation. It may be that the gender gap that once existed in guilt and attitudes towards sexuality is closing while a gap in sexual attitudes and sexual health knowledge is still present. Additionally, a large disparity between perceived sexual health knowledge and actual sexual health knowledge was found and should be further examined. Findings from this study largely contradict previous findings on the relationship between guilt, attitudinal, and inhibition/excitation factors and sexual response and suggest that these factors have a minimal impact on self-reported sexual arousal. Although this may be due to shifting social norms, the sample was highly educated and thus more likely to have positive attitudes towards sexuality than individuals with less education. Ultimately, these preliminary results need to be replicated in a larger sample that has more variation in education levels, sex guilt, and sexual inhibition. It is conceivable that these factors have a greater impact on sexual arousal for individuals who are more extreme in their levels of sex guilt and attitudes towards sexuality.
References


Appendix A

Certificate of Ethical Approval

RESEARCH ETHICS BOARDS
Certification of Ethical Acceptability of Research Involving Human Participants

APPROVAL PERIOD: November 3, 2015
EXPIRY DATE: November 3, 2016
REB: G
REB NUMBER: 15AU017
TYPE OF REVIEW: Full Board
PRINCIPAL INVESTIGATOR: Kukkonen, Tuuli (kukkonen@uoguelph.ca)
DEPARTMENT: Family Relations & Applied Nutrition
SPONSOR(S): N/A
TITLE OF PROJECT: Sexual Arousal and Attitudes Research Study

The members of the University of Guelph Research Ethics Board have examined the protocol which describes the participation of the human participants in the above-named research project and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement, 2nd Edition.

The REB requires that researchers:

- Adhere to the protocol as last reviewed and approved by the REB.
- Receive approval from the REB for any modifications before they can be implemented.
- Report any change in the source of funding.
- Report unexpected events or incidental findings to the REB as soon as possible with an indication of how these events affect, in the view of the Principal Investigator, the safety of the participants, and the continuation of the protocol.
• Are responsible for **ascertaining and complying with all applicable legal and regulatory requirements** with respect to consent and the protection of privacy of participants in the jurisdiction of the research project.

The Principal Investigator must:

• Ensure that the ethical guidelines and approvals of facilities or institutions involved in the research are obtained and filed with the REB prior to the initiation of any research protocols.

• Submit a **Status Report** to the REB upon completion of the project. If the research is a multi-year project, a status report must be submitted annually prior to the expiry date. Failure to submit an annual status report will lead to your study being suspended and potentially terminated.

The approval for this protocol terminates on the **EXPIRY DATE**, or the term of your appointment or employment at the University of Guelph whichever comes first.

Signature: 

Date: November 3, 2015

L. Kuczynski
Chair, Research Ethics Board-General
Appendix B

Recruitment Materials

Social Media Recruitment: Facebook

I’m looking for participants for my Master’s thesis research. I’m studying how attitudes toward sexuality impact sexual arousal. Participants will need to come to the Psychophysiology of Sexual Health (POSH) Lab located at the University of Guelph and watch a series of videos including one sexually explicit video while their genital temperature is recorded. Do you know anyone between the ages of 18-45 who would be interested in participating?
Social Media Recruitment: Twitter

Recruiting participants for my master's thesis @uoguelph studying how attitudes towards sex impact arousal #sexresearch #uoguelph #POSHlab
Social Media Recruitment: Instagram

Recruiting participants for my master's thesis @uoguelph studying how attitudes towards sex impact arousal #sexresearch #uoguelph #POSHlab
Recruitment Poster:

**Sexual Arousal and Attitudes Research Study**
**Call for Research Participants**

- Are you between 18 and 45 years old?
- Have you ever watched sexually explicit videos?
- No history of or current issues with sexual functioning
- Would you like to contribute to the advancement of knowledge of human sexuality?
- Are you a man or a pre-menopausal woman?

**Come to the Psychophysiology of Sexual Health Lab at the University of Guelph**

- One 90 minute laboratory visit
- Watch a sexually explicit video
- Answer questionnaires about attitudes towards sexuality
- Genital temperature will be monitored
- Compensation will be provided

Contact Samantha Landry at slandry@uoguelph.ca with any questions or concerns.
E-mail Recruitment Letter:

Department of Family Relations and Applied Nutrition
College of Social and Applied Human Sciences

Hello, my name is Samantha Landry and I am a graduate student in the Department of Family Relations and Applied Nutrition at the University of Guelph. I am currently conducting research under the supervision of Tuuli Kukkonen, PhD, C.Psych, for the purpose of my Master’s thesis. I am interested in how attitudes towards sexuality impact sexual arousal.

Interested participants should be between the ages of 18-45; have viewed pornography prior to participating; be predominately attracted to members of the opposite sex; have no history of sexual dysfunction; and not be taking medications that effect sexual functioning. Participation would involve taking part in a telephone screening and a 1.5 hour laboratory visit to the Psychophysiology of Sexual Health (POSH) Lab at the University of Guelph.

The laboratory visit will involve answering a brief demographic, sexual arousal, and medical questionnaire; answering a number of questionnaires about sexuality related attitudes and knowledge; watching three videos, one of which is sexual in nature, while genital temperature is monitored; and answering questionnaires about arousal during the videos. Participants will be asked to undress from the waist down so that a special temperature-detecting camera, which does not require direct physical contact, can monitor genital temperature. Involvement in the study is entirely voluntary. Participants can decline to answer any questions they do not wish to answer and may terminate their involvement at any time, no questions asked. Participants will receive financial compensation upon completing the testing session.

If you would like additional information or would like to participate in this study, feel free to contact me at slandry@uoguelph.ca or you can contact my academic supervisor Tuuli Kukkonen, an Associate Professor in the Department of Family Relations and Applied Nutrition at the University of Guelph. Dr. Kukkonen can be contacted at kukkonen@uoguelph.ca or 519-824-4120 ext. 53345.

Thank you kindly for your consideration.

Sincerely,

Samantha Landry
slandry@uoguelph.ca
Verbal Script:

Hi! I’m looking for individuals who would be interested in participating in my Master’s thesis research. I’m interested in seeing how attitudes toward sexuality impact arousal. Interested participants will need to come into the laboratory to fill out several questionnaires and watch a series of videos including one heterosexual sexually explicit film while their genital temperature is monitored using a special temperature-detecting camera. Do you happen to know anyone between the ages of 18-45 who is able to come to the University of Guelph for the study who would be interested?
Appendix C

Consent Form

University of Guelph

Department of Family Relations and Applied Nutrition
College of Social and Applied Human Sciences

CONSENT TO PARTICIPATE IN RESEARCH

Sexual Arousal and Attitudes Research Study

INTRODUCTION
You are being invited to participate in a research study examining how attitudes towards sexuality impact sexual functioning and sexual arousal directed by Tuuli Kukkonen, PhD, C.Psych., in the Department of Family Relations & Applied Nutrition (FRAN). The results of this study will contribute to the thesis of University of Guelph MSc student Samantha Landry. The purpose of this letter is to provide you with the information you require to make an informed decision on participating in this research.

RESEARCHER CONTACT INFORMATION:
If you have any questions or concerns, please don’t hesitate to contact:

Samantha Landry, B. S. Sc.,
University of Guelph Study Coordinator
M.Sc. Candidate, Dept. of Family Relations & Applied Nutrition, University of Guelph
Phone: 519-824-4120 x53349 or email: slandry@uoguelph.ca

Tuuli Kukkonen, Ph.D., C. Psych.
University of Guelph Study Director
Assistant Professor, Dept. of Family Relations & Applied Nutrition, University of Guelph
Director, Psychophysiology of Sexual Health Lab
Phone: 519-824-4120 x53345 or email: kukkonen@uoguelph.ca

PURPOSE OF THE STUDY
This study is being conducted to explore whether individuals’ attitudes towards sexuality impact their physiological sexual functioning and more specifically their sexual arousal. This research will contribute to the broader field of human sexuality studies using physiological measures.

ELIGIBILITY
The researchers wish to be inclusive in their recruitment process. This project requires:
- The removal of all articles of clothing from the waist down
- Thermal imaging of your body from the belly button to mid-thigh
- Interaction one on one with a female researcher
If for any reason you may feel uncomfortable taking part, please contact the researcher to discuss possible modifications to the procedure to address your concerns. In order to ensure participants be comfortable and familiar with the material and to limit the differences in how individuals respond to the stimuli and the procedure, participants must:

- Between the ages of 18-45
- Have viewed pornography prior to participating
- Be predominately attracted to members of the opposite sex
- Have no history of sexual dysfunction and not be taking medications that effect sexual functioning.

**PROCEDURES**

Participation in the study will involve one laboratory session consisting of the following procedures:

1) You will be asked to answer a brief demographic, sexual arousal, and medical questionnaire
2) You will be asked to answer a number of questionnaires about sexuality related attitudes and knowledge
   
   You will be shown three 15-minute video segments. The first video will be a neutral film without sexual content. This time period will allow your genital temperature to stabilize and will also allow you to become acclimatized to the setting. The second video will also be neutral and will be used for the baseline measurement of genital temperature. The third video will be sexually explicit in nature. The sexually explicit video consists of scenes depicting consenting adults engaged in a variety of sexual activities including kissing, masturbation, mutual oral sex and penetration. The video and the scenes are quite explicit. During each video you will be asked to continuously monitor your sexual arousal with the use of a hand-held clicker. In addition, after each video, you will be asked to rate subjective reactions to the film (relaxation, sexual arousal, etc.).
3) Having your genital area monitored with a thermal imager. You will be asked to view the videos after removing all articles of clothing so that you are naked from the waist down and sitting on a reclining medical examination table with your knees up. The camera remotely detects changes in temperature and does not require direct contact (see image 1 for an example examination table). You will be alone* in the room at all times during the genital temperature monitoring procedure.

* In the unlikely event of an equipment malfunction, you will be provided ahead of time with a disposable sheet that you may use to cover yourself should the experimenter be required to enter the room during testing. Should this happen, you will be warned via the intercom system that there is an issue with the equipment. You will be asked to cover your lap with the examination sheet and to inform the experimenter when it is appropriate to enter.

If you choose to participate in this study, the laboratory visit will take place at the Psychophysiology of Sexual Health (POSH) Lab at the University of Guelph and will take approximately 1.5 hours of your time. During your visit, there will always be two female researchers in the lab. At this time it is not possible for your visit to be conducted by a male researcher.
THERMOGRAPHY
Thermal imaging technology or thermography refers to the remote recording of temperature through the detection of infrared radiation. Thermal imaging technology has been used for a variety of health-related research studies including dermatology, rheumatology, and breast cancer detection. The two basic principles upon which this technology works are as follows: 1) human skin or various membranes constantly emit electrochemical energy and are very efficient radiators of such energy; 2) it is possible to detect infrared emission from the skin by remote sensing. New thermography equipment can produce thermal images where the average temperature of less than a millimeter of skin can be determined with a precision of .07 degree Centigrade in a very short period of time. All that is required is to focus an infrared camera attached to a computer with special software on the skin area(s) of interest. The software produces a continuous record of temperature in the area(s) of interest.
Thermal imaging technology is particularly appealing for studies of sexual response as the camera can remotely detect genital temperature, an indirect measure of blood flow, and thus can provide a physiological measure of sexual arousal through the monitoring of genital temperature changes during a sexual stimulus.
The thermal imaging camera is used to remotely record temperature of anything in its field of view. The camera works much like night vision goggles in that it produces a multicolored image on the computer screen that corresponds to the various temperatures it is detecting (see image 2).

Image 2. Example thermal image of an individual’s back
STUDY RESULTS AND PUBLICATION
The results of the study will be published as part of Samantha Landry’s Master’s thesis.

POTENTIAL RISKS AND DISCOMFORTS
This project involves the removal of articles of clothing from the waist down and answering questions about your sexual attitudes. The primary risk involved is that some of the above procedures may be embarrassing and may cause you to feel awkward. If at any point you have any concerns about your health or general well-being you may ask any questions of the researchers or withdraw your participation from the study. Every effort will be made to ensure your comfort during the course of this study. If at any point you experience any distress, please tell the interviewer and they will discuss these feelings with you and/or provide you with some contacts if you would like counseling. You may also contact the principal investigator to discuss any concerns you may have.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY
The major benefit of participating in the study is the opportunity to contribute to the growing field of sexual health research. Participating in this study will help researchers gain a better understanding of the factors that contribute to sexual functioning and therefore could be helpful in the treatment of sexual arousal problems. In addition, as a participant, you may gain a better understanding of your own attitudes towards sexuality as some questions may ask you to think about issues you have not previously considered. Also, you will gain the experience of participating in a research study.

PAYMENT FOR PARTICIPATION
If you choose to participate in this study you will receive $40 CAD to cover costs such as transportation, parking, babysitting, loss of work, etc. If you withdraw from the study before its completion, your compensation will be pro-rated accordingly.

CONFIDENTIALITY
Every effort will be made to ensure confidentiality of any identifying information that is obtained in connection with this study. All participants will be assigned a number, and a study code will be used. A list of number codes linked to initials will be kept separate from the data in a locked filing cabinet in a locked room accessible only to the research team. Your name will never be used in communicating any aspect of the study. Records will be kept on a password-protected
computer and/or in a locked cabinet in a locked office. Results of the study may be published, but they will be presented as group data. Confidentiality will be kept within the limits of the need to disclose. Should you disclose any information that places yourself or someone else in imminent harm, the researcher will contact appropriate authorities.

**PARTICIPATION AND WITHDRAWAL**
You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may exercise the option of removing your data from the study. You may also refuse to answer and questions you don’t want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise that warrant doing so. The investigator may withdraw you if participation is no longer in your best interest. You will be given a copy of this consent form.

**RIGHTS OF RESEARCH PARTICIPANTS**
You may withdraw your consent at any time and discontinue participation without penalty. Furthermore, you may refuse to answer any questions posed without need of an explanation on your part. You are not waiving any legal claims, rights or remedies because of your participation in this research study. This study has been received and received ethics clearance through the University of Guelph Research Ethics Board.

**CONTACTS**
In the event that you have any complaints or dissatisfactions with this research, they can be communicated to one of the principal investigators. If you have any questions regarding your rights as a research participant, please contact:

Sandy Auld  
Research Ethics Officer  
University of Guelph  
437 University Centre  
Guelph, ON, N1G 2W1  
Telephone: 519-824-4120, ext. 56606  
E-mail: sauld@uoguelph.ca  
Fax: 519-821-5236

**SIGNATURE OF RESEARCH PARTICIPANT**
I have read the information provided for the Sexual Arousal and Attitudes Research Study as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

<table>
<thead>
<tr>
<th>NAME OF PARTICIPANT</th>
<th>SIGNATURE OF PARTICIPANT</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NAME OF WITNESS</th>
<th>SIGNATURE OF WITNESS</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix E

Screening Interview

Sexual Arousal and Attitudes Research Study Screening Interview

Date: ____________________

Interviewer: ____________________

Before we proceed, are you comfortable answering a series of questions in English? Will you be comfortable with reading questions in English in the laboratory?

   YES    NO

1. Are you calling in response to a specific study?    YES    NO
   ▶ If YES, which one?
      ☐ Sexual Arousal and Attitudes Research Study
      ☐ Other

2. How did you hear about this/these studies?
   ☐ Newspaper ad (which one: ____________________)
   ☐ Word of mouth
   ☐ Other (how: ____________________)

3. What is your gender?
   ☐ Male
   ☐ Female
   ☐ Other*
   ☐ Decline*

Before I explain the purpose of the study and continue asking you question, I want to inform you that should you not qualify for the study, any information collected during this call will be cleared of any details that identify you. The information that is left will be kept until five years following publication of this study. Do you consent to having this data stored for five years following publication?

   YES    NO

Let me tell you about the study:
Sexual Arousal and Attitudes Research Study

The purpose of this study is to examine how attitudes towards sexuality, both attitudes towards one’s own sexuality and of sexuality in general, impact sexual arousal. The researchers want to test whether individuals with differing attitudes experience different levels of sexual arousal.

The study consists of answering questions about general health information over the phone and of a 1.5 hour testing session in the laboratory. At the laboratory, participants will be asked to answer a series of questions about sexual health knowledge and attitudes towards sexuality. After doing so, they will watch three 15-minute film clips on special DVD goggles while their genital temperature is monitored remotely with a thermal imaging camera. This technology picks up heat emitted from the body and requires no physical contact, though participants will need to be undressed from the waist down. Participants will be asked to watch two neutral videos with no sexual content followed by a sexually explicit film.

Do you have any questions about the study? (Answer any questions)

If at any point during this conversation you have any questions, please feel free to ask them.

While participating in this study you will view a heterosexual erotic video which consists of scenes depicting consenting adults engaged in a variety of sexual activities including kissing, masturbation, mutual oral sex and penetration. The video and the scenes are quite explicit.

Do you feel uncomfortable at the thought of watching a sexually explicit video in the lab?

YES* NO

4. How would you describe your sexual orientation?

* If sexual orientation is gay or exclusively same sex attraction:
The study being conducted is only using heterosexual film clips as a sexual stimulus at this time and future studies will likely expand to include various sexual orientations and attractions.

Would you be aroused watching a heterosexual sexually explicit video?

All researchers in the lab are female. Are you comfortable participating knowing that there is no option of having a male researcher present?

YES NO*
** Given that we have a personal relationship, would you feel more comfortable having a different researcher run your laboratory session?

5. Are you interested in participating? YES  NO*

6. Do you mind answering some questions about your general medical, gynecological (urological), and sexual history to determine if you are eligible for the study?

   YES*  NO

7. May I have your name: __________________________________________

8. How old are you: __________ (*must be between 18-45 and, for women, premenopausal)

9. Are you currently taking any medications regularly (including birth control)?

   YES*  NO

   ➢ If yes, which one(s)? __________________________________________

10. FOR WOMEN ONLY (MEN CONTINUE TO QUESTION 9):
    a) How often do you get your period?* ________________________________

    b) Have you noticed any irregularities with your menstrual cycle?

       YES*  NO

       If YES: explain and when did you notice a change in your cycles?

       _____________________________________________________________

    d) Are you experiencing any of the following symptoms:

       ➢ Hot flashes?  YES*  NO
       ➢ Night sweats?  YES*  NO
       ➢ Urinary incontinence?  YES*  NO
       ➢ Pain during urination?  YES*  NO
       ➢ Pain during intercourse?  YES  NO

    e) Are you currently taking any hormone replacement medications?
f) Are you currently taking any natural supplements of phytoestrogens? (e.g., soy products, black cohosh, St. John’s wort, wild yam, dong quai, evening primrose, valerian root, ginseng, chasteberry)

YES* NO

If yes, which ones and why?__________________________________________

11. Are you suffering from any chronic health conditions? YES* NO (e.g., diabetes, hypertension, etc.)

11b. Are you currently taking any medications regularly? YES NO

If YES, What?__________________________________________

12. Have you had a gynecological (urological) examination in the past three years? YES* NO*

➢ If YES (Urological), for what reason?________________________________

➢ If NO (Gynecological), why not?________________________________

13. Do you currently suffer from any sexual difficulties? YES* NO

➢ If YES, What?________________________________

14. Have you ever watched a sexually explicit movie or video? YES NO*

15. Do you feel uncomfortable about or object to the idea of watching a sexually explicit
video or movie?

YES* NO

16. Do you have any difficulty getting aroused at sexually explicit movies or videos?

YES* NO I DON'T KNOW*

17. Do you have difficulty getting sexually aroused by yourself (e.g., masturbation)?

YES* NO I DON'T KNOW*

18. Do you have difficulty getting sexually aroused with a partner?

YES* NO I DON'T KNOW*

19. Are you concerned about your ability to get sexually aroused?

YES* NO I DON'T KNOW*

➢ If yes, would you like us to provide you with a referral?

YES N

BOOKING SUBJECTS

When are you generally available to participate in this study?

Eligible for the study?

☐ YES
☐ NO
☐ NOT SURE (consult Tuuli before booking)

*FOR WOMEN ONLY:

➢ When was the first day of your last period? 

➢ BOOK WOMEN ONLY BETWEEN DAY 20 AND 28 OF MENSTRUAL CYCLE
➢ If participant is uncertain, as when her next period is and book within the week before day 1.

We will contact you to confirm your appointment, please notify us 24 hours ahead of time if you will be unable to make it.

Phone #
➢ Home:______________________  Can we leave a message?  YES  NO
➢ Work:_______________________  Can we leave a message?  YES  NO
➢ Cell:_______________________  Can we leave a message?  YES  NO
➢ Email:_____________________

APPOINTMENT DATE AND TIME:
Appendix E

Socio-Demographic Questionnaire

1. Date of birth: ______/_______ Age:________

2. Which of the following BEST describes your ethnic background? Please TICK ALL THAT APPLY.
   - Aboriginal/First Nations/Métis
   - White/European
   - Black/Africa/Caribbean
   - Southeast Asian (e.g., Chinese, Japanese, Korean, Vietnamese, Cambodian, Filipino, etc.)
   - Arab (Saudi Arabian, Palestinian, Iraqi, etc.)
   - South Asian (East Indian, Sri Lankan, etc.)
   - Latin American (Costa Rican, Guatemalan, Brazilian, Colombian, etc.)
   - West Asian (Iranian, Afghani, etc.)
   - Other (please specify) ________________________________

3. What is your mother tongue? ________________________________

4. Occupation? ________________________________

5. Which of the following best describes your HIGHEST level of education?
   - Some high school
   - Completed high school
   - Some college/university
   - Apprenticeship training and trades
   - Completed college/university
   - Some graduate education
   - Completed graduate education
   - Professional degrees

6. Which of the following best describes your current dating/couple/marital situation?
   - No regular partner at the moment
7. Have you experienced childbirth?  
   YES  NO
   ➢ If YES, please specify # of children__________

8. How would you describe your religious affiliation?
   □ ____________________

9. How would you describe your sexual orientation?
   ____________________

10. If your relationship status is not single, how long have you been in this/these relationship(s)?
    ____________________

11. Do you feel that you have received adequate sexual education?
    YES  NO

12. Did you receive any formal sexual education? (school, community group, etc.)
    YES  NO

13. From where did you receive your sexual education?
    ____________________

14. Which of the following topics were discussed in your sexual education? (select all that apply)
    □ Contraception
    □ Abstinence
    □ STI’d/STD’s
    □ Masturbation
    □ Sexual Dysfunction
15. Which of the following topics do you feel informed about?
- Contraception
- Abstinence
- STI’d/STD’s
- Masturbation
- Sexual Dysfunction
- Anatomy
- Consent
- Sexual Orientation
- Puberty
- Reproduction

16. Height: ________

17. Weight: __________
Appendix F

Centrality of Religiosity Scale

CENTRALITY OF RELIGIOSITY SCALE

This questionnaire is designed to measure the centrality of religion in your life. It is not a test, so there are no right or wrong answers. Answer each item as carefully and as accurately as you can by selecting the answer that best describes your behavior.

1. How often do you think about religious issues?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Several times a day</th>
<th>Once a day</th>
<th>More than once a week</th>
<th>Once a week</th>
<th>More than once a week</th>
<th>One to three times a month</th>
<th>A few times a year</th>
<th>Less often</th>
<th>Never</th>
</tr>
</thead>
</table>

2. To what extent do you believe that God or something divine exists?

<table>
<thead>
<tr>
<th>Extent</th>
<th>Very much so</th>
<th>Quite a bit</th>
<th>Moderately</th>
<th>Not very much</th>
<th>Not at all</th>
</tr>
</thead>
</table>

3. How often do you take part in religious services?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>More than once a week</th>
<th>Once a week</th>
<th>One to three times a month</th>
<th>A few times a year</th>
<th>Less often</th>
<th>Never</th>
</tr>
</thead>
</table>

4. How often do you pray?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Several times a day</th>
<th>Once a day</th>
<th>More than once a week</th>
<th>Once a week</th>
<th>More than once a week</th>
<th>One to three times a month</th>
<th>A few times a year</th>
<th>Less often</th>
<th>Never</th>
</tr>
</thead>
</table>

5. How often do you experience situations in which you have the feeling that God or something divine intervenes in your life?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Several times a day</th>
<th>Once a day</th>
<th>More than once a week</th>
<th>Once a week</th>
<th>More than once a week</th>
<th>One to three times a month</th>
<th>A few times a year</th>
<th>Less often</th>
<th>Never</th>
</tr>
</thead>
</table>
6. How often do you meditate?

<table>
<thead>
<tr>
<th></th>
<th>Several times a day</th>
<th>Once a day</th>
<th>More than once a week</th>
<th>Once a week</th>
<th>One to three times a month</th>
<th>A few times a year</th>
<th>Less often</th>
<th>Never</th>
</tr>
</thead>
</table>

7. How often do you experience situations in which you have the feeling that you are touched by a divine power?

<table>
<thead>
<tr>
<th></th>
<th>Several times a day</th>
<th>Once a day</th>
<th>More than once a week</th>
<th>Once a week</th>
<th>One to three times a month</th>
<th>A few times a year</th>
<th>Less often</th>
<th>Never</th>
</tr>
</thead>
</table>
Appendix G

Sexual Health Knowledge Scale

SEXUAL KNOWLEDGE QUESTIONNAIRE

This questionnaire is designed to measure your knowledge of sexual and reproductive health. Answer each item as accurately as you can by selecting ‘true’ or ‘false’. If you are uncertain about an answer select ‘I don’t know’.

1. Most Canadians aged 20 to 24 have had more than one sexual intercourse partner in the past year.
2. Most Canadians aged 20 to 24 used a condom the last time they had sexual intercourse.
3. Plan B, the morning after pill, will not be effective if taken more than 24 hours after unprotected intercourse.
4. The point during a woman’s menstrual cycle in which she is more likely to become pregnant occurs about two weeks before her period begins.
5. Premature ejaculation (coming too soon) is the most common sexual dysfunction among men.
6. The most common sexual dysfunction among women is the persistent inability to have an orgasm during partnered sexual activity.
7. Human papillomavirus (HPV) is the most common sexually transmitted infection in Canada.
8. Most cases of genital herpes transmission occur when the infected partner has no visible symptoms.
9. A vaccine is now available to prevent HIV (human immunodeficiency virus).
10. Chlamydia is a sexually transmitted infection that cannot be cured.
Appendix H

Sex Guilt Scale of the Revised Mosher Guilt Inventory

REVISED MOSHER GUILT INVENTORY – SEX GUILT

This inventory consists of 50 items arranged in pairs of responses written by college students in response to sentence completion items such as “When I have sexual dreams…” You are to respond to each item as honestly as you can by rating your response on a 7-point scale from 0, which means not at all true of (for) me to 6, which means extremely true of (for) me. Ratings of 0 to 6 represent ratings of agreement-disagreement that are intermediate between the extreme anchors of not at all true and extremely true for you. The items are arranged in pairs of two to permit you to compare the intensity of a trueness for you. This limited comparison is often useful since people frequently agree with only one item in a pair. In some instances, it may be the case that both items or neither item is true for you, but you will be able to distinguish between items in a pair by using different ratings from the 7-point range for each item.

Rate each of the 50 items from 0 to 6 as you keep in mind the value of comparing items within pairs. Record your answers on the answer sheet by filling in the blank opposite the item number with your rating from 0 to 6. Please do not omit any items.

Dirty jokes in mixed company…
1. do not bother me.
2. are something that make me very uncomfortable.

Masturbation…
3. is wrong and will ruin you.
4. helps one feel eased and relaxed.

Sex relations before marriage…
5. should be permitted.
6. are wrong and immoral.

Sex relations before marriage…
7. ruin many a happy couple.
8. are good in my opinion.

Unusual sex practices…
9. might be interesting
10. don’t interest me.

When I have sexual dreams…
11. I sometimes wake up feeling excited.
12. I try to forget them.
“Dirty” jokes in mixed company…
13. are in bad taste.
14. can be funny depending on the company.

Petting…
15. I am sorry to say is becoming an accepted practice.
16. is an expression of affection which is satisfying

Unusual sex practices…
17. are not so unusual
18. don’t interest me

Sex…
19. is good and enjoyable
20. should be saved for wedlock and childbearing

“Dirty jokes” in mixed company…
21. are coarse to say the least.
22. are lots of fun.

When I have sexual desires…
23. I enjoy it like all healthy human beings
24. I fight them for I must have complete control of my body.

Unusual sex practices…
25. are unwise and lead to trouble.
26. are all in how you look at it.

Unusual sex practices…
27. are OK as long as they’re heterosexual
28. usually aren’t pleasurable because you have preconceived feelings about their being wrong.

Sex relations before marriage…
29. in my opinion, should not be practiced
30. are practiced too much to be wrong

As a child, sex play…
31. is immature and ridiculous
32. was indulged in.

Unusual sex practices…
33. are dangerous to one’s health and mental condition.
34. are the business of those who carry them out and no one else’s.
When I have sexual desires…
35. I attempt to repress them.
36. they are quite strong.

Petting…
37. is not a good practice until after marriage
38. is justified with love.

Sex relations before marriage…
39. help people adjust
40. should not be recommended

Masturbation…
41. is wrong and a sin.
42. is a normal outlet for sexual desire.

Masturbation…
43. is all right.
44. is a form of self destruction.

Unusual sex practices…
45. are awful and unthinkable.
46. are all right if both partners agree.

If I had sexual relations, I would feel…
47. all right, I think.
48. I was being used not loved.

Masturbation…
49. is all right
50. should not be practiced.
Appendix I

Sexual Excitation/Sexual Inhibition Inventory for Women and Men

SEXUAL EXCITATION/SEXUAL INHIBITION INVENTORY FOR WOMEN AND MEN

The next set of items asks about things that might affect your sexual arousal. Other ways that we refer to sexual arousal are feeling “turned on,” “sexually excited,” and “being in a sexual mood.” Men and women describe their sexual arousal in terms of genital changes (being “hard,” “wet,” tingling sensations, feelings of warmth, etc.). Men and women also mention non-genital sensations (increased heart rate, temperature changes, skin sensitivity, etc.) or feelings (anticipation, feeling “open,” etc.).

We are interested in what would be the most typical reaction for you now. You might read a statement that you feel is not applicable to you, or a statement that refers to a situation that may have occurred in the past but is not likely to occur now. In such cases please indicate how you think you would respond, if you were in that situation. Some of the questions sound very similar, but are different; please read each question carefully and then mark the response which indicates your answer. Don’t think too long before answering. Please give your first reaction to each question.

** Response choices:
1. Strongly Disagree; 2. Disagree; 3. Agree; 4. Strongly Agree

Inhibitory Cognitions
Sometimes I have so many worries that I am unable to get aroused.
If I feel that I am expected to respond sexually, I have difficulty getting aroused.
Sometimes I feel so “shy” or self-conscious during sex that I cannot become fully aroused.
If I think about whether I will have an orgasm, it is much harder for me to become aroused.
If I am worried about taking too long to become aroused, this can interfere with my arousal.
When I am having sex, I have to focus on my own sexual feelings in order to stay aroused.
If I am concerned about being a good lover, I am less likely to become aroused.
Unless things are “just right” it is difficult for me to become sexually aroused.

Relationship Importance
It would be hard for me to become sexually aroused with someone who is involved with another person.
I really need to trust a partner to become fully aroused.
If I am very sexually attracted to someone, I don’t need to be in a relationship with that person to become sexually aroused.
If I think that I am being used sexually it completely turns me off.
If I think that a partner might hurt me emotionally, I put the brakes on sexually.

Arousability
When I think about someone I find sexually attractive, I easily become sexually aroused.
I think about sex a lot when I am bored.
Sometimes I am so attracted to someone, I cannot stop myself from becoming sexually aroused. Just talking about sex is enough to put me in a sexual mood. Just being physically close with a partner is enough to turn me on.

**Partner Characteristics and Behaviors**
Someone doing something that shows he/she is intelligent turns me on. Seeing a partner doing something that shows his/her talent can make me very sexually aroused. If I see a partner interacting well with others, I am more easily sexually aroused. If a partner surprises me by doing chores, it sparks my sexual interest. I find it arousing when a partner does something nice for me.

**Setting (Unusual or Unconcealed)**
If it is possible someone might see or hear us having sex, it is more difficult for me to get aroused. I get really turned on if I think I may get caught having sex. I find it harder to get sexually aroused if other people are nearby. Having sex in a different setting than usual is a real turn-on for me.

**Dyadic Elements of the Sexual Interaction**
While having sex, it really decreases my arousal if my partner is not sensitive to the signals I am giving. It interferes with my arousal if there is not a balance of giving and receiving pleasure during sex. If I am uncertain how my partner feels about me, it is harder for me to get aroused.
### Appendix J

**Self-Reported Sexual Arousal Questionnaire**

**Arousal Questionnaire for Film Clips**

Date: ____________________

**Please indicate the number which best describes your experience:**

1. Overall, how relaxed did you feel during this film?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>the most relaxed I've ever been</td>
</tr>
</tbody>
</table>

2. Overall, how much did you enjoy the film?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>the most enjoyable film I've ever seen</td>
</tr>
</tbody>
</table>

3. Overall, how funny did you find the film?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all funny</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>funniest film I've ever seen</td>
</tr>
</tbody>
</table>

4. Overall, how anxious did you become during this film?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all anxious</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>the most anxious I've ever been</td>
</tr>
</tbody>
</table>

5. Overall, how frightening was this film?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all frightening</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>most frightening film I've ever seen</td>
</tr>
</tbody>
</table>
6. Overall, how sexually aroused did you become during this film?

0 1 2 3 4 5 6 7 8 9 10
not sexually aroused at all
the most sexually aroused I've ever been

7. At what point during the film would you say that you were most sexually aroused?

- Was not at all sexually aroused
- Within the first 5 minutes
- Between 5-10 minutes (middle of film)
- During the last 5 minutes
- Varied throughout (up and down during the film)
- Other; explain

8. How would you rate your peak sexual arousal during the film?

0 1 2 3 4 5 6 7 8 9 10
not at all sexually aroused
the most sexually aroused I've ever been

Now I am going to ask you to consider your sexual arousal specifically in terms of mental and physical parts:

9. Overall, how sexually aroused were you **mentally** during the film?

0 1 2 3 4 5 6 7 8 9 10
not at all mentally aroused
the most mentally aroused I've ever been

10. Did watching the video make you feel like having sex with a partner?

0 1 2 3 4 5 6 7 8 9 10
not at all
the most I've ever felt
11. Did watching the video make you feel like masturbating?

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not at all</td>
<td>the most I've ever felt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. Overall, how sexually aroused were you **physically** during the film?

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not at all</td>
<td>the most physically aroused I've ever been</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. How much genital change did you feel during the film?

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no genital change</td>
<td>the most genital change I've ever felt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14. **Women:** How much lubrication (wetness) did you feel during the film?

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no lubrication at all</td>
<td>the most lubrication I've ever felt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. **Women:** How much genital tingling or fullness did you feel during the film?

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no genital tingling/fullness</td>
<td>The most genital tingling/fullness I've ever felt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. **Men:** How would you rate your erection in response to this film?

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no erection at all</td>
<td>hardest erection ever</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
17. How sexually aroused did you feel during the film as compared to how sexually aroused you typically are with a partner?

-5  -4  -3  -2  -1  0  1  2  3  4  5
much less sexually aroused
no difference
much more sexually aroused

18. Did the process of having your genitals filmed affect you in any way?

YES         NO

➢ If Yes, describe how:_____________________________________________________

   A) To what extent did it □ increase or □ decrease your sexual arousal?

0  1  2  3  4  5  6  7  8  9  10
not at all
the most possible

19. Is there anything else you would like to say about this film?

_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________