Application of the Theory of Gender and Power to Relationships and Experiences among Middle Eastern and/or Arab Canadians

by

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

ABSTRACT

Background. The study explored associations between factors derived from the application of the Theory of Gender and Power (TGP) as they relate to HIV-risk behaviour among Middle Eastern/Arab-Canadians. This area deserves increased attention, as the proportion of HIV incident cases among Canadian women—due to heterosexual transmission—is increasing.

Methods. A web-based survey was administered to Middle Eastern/Arab-Canadians who were aged 18-35 years, of Middle Eastern and/or Arab descent, living in Canada, heterosexual, and in a relationship. Multivariate regression analyses were used to assess factors associated with condom-use risk and lifetime number of sexual partners. Analyses were stratified by gender.

Results. The study sample consisted of 157 participants, with more female participants (65.38%), and a mean age of 22.71 years. Females were more likely to have an older partner and more likely to be virgins, compared to males. Only a third (27.45%) of sexually active participants in this sample reported using condoms every time they have sex and participants reported a mean of 4.31 lifetime sexual partners. Factors associated with both condom-use risk and lifetime number of sexual partners varied greatly between genders. Among females, having low self efficacy towards practicing safer sex was predictive of condom-use risk. Among males, not being worried about getting HIV was predictive of condom-use risk. Thinking they knew how to use condoms was predictive of having more sexual partners among females, while being low acculturated from Middle Eastern culture was predictive of more partners among males.

Conclusions. Factors associated with HIV risk varied greatly between genders among this sample and may contribute to power imbalances within relationships. The application of the TGP to this sample was moderately successful in predicting number of sexual partners among females and condom-use risk among males. However, it was not as successful in predicting condom-use risk among females and number of sexual partners among males. Many factors associated with HIV risk have been identified in this study, and should be used to create interventions designed to increase equality within Middle Eastern/Arab-Canadian relationships. However, many issues are discussed that still need to be addressed in future research.

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"Anyone can give up, it's the easiest thing in the world to do. But to hold it together when everyone would understand if you fell apart, that's true strength".

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

1. INTRODUCTION

The Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
(HIV/AIDS) epidemic is a global problem. Worldwide, there were approximately 40.3 million
people living with HIV in 2005; 17.5 million of those are women (UNAIDS/WHO, 2005). In
the same year, 4.9 million people were newly infected with HIV and 3.1 million people died of
AIDS around the world (UNAIDS/WHO, 2005).

In Canada, the transmission of HIV through sexual contact has increased over the past
decade, compared to other types of transmission, such as intravenous drug use (PHAC, 2005).
While for men, it is most common to become infected with HIV by having sexual relations with
other men (PHAC, 2006b), heterosexual HIV transmission remains the most common route of
infection for women (PHAC, 2006b). For example, the number of HIV positive test reports per
year for women due to heterosexual transmission has increased over the past five years (131 in
2000 to 157 in 2005) (PHAC, 2006a). Among women aged 35-44 years of age in the United
States, HIV is the fifth leading cause of death and is sixth among women aged 25-34 years
(Anderson & Smith, 2005). Women are approximately 7-9 times more likely to contract HIV
from an infected male partner than males are to contract it from an infected female partner
(Padian, Shiboski, Glass, & Vittinghoff, 1997). In addition, once infected with HIV, women are
at increased risk for bacterial pneumonia and are more likely to die than men (Melnick et al.,
1994). Thus, the association between heterosexual relationships and HIV transmission deserves
increased attention, especially considering the health repercussions for women. A better
understanding of the relation between heterosexual behaviour and HIV transmission will help
delineate why and how women are at increased risk, and may offer suggestions as to how we can
decrease women's risk of contracting HIV.

1

Understanding gender-based factors and power dynamics within relationships is crucial in attempting to decrease HIV risk. Aside from abstinence, condom use has been reported to be highly effective in preventing sexually transmitted infections (STIs) (Conant, Spicer, & Smith, 1984; Stone, Grimes, & Magder, 1986) and HIV (Perlman et al., 1990; Van de Perre, Jacobs, & Sprecher-Goldberger, 1987), and as argued in previous research, is a method that requires both partners' involvement (Noar, Morokoff, & Harlow, 2004). It must be recognized that sexual intercourse is dyadic; it includes more than one sexual partner (Taylor, 1995). A power imbalance favoring men within relationships decreases women's control over decision-making (Davila, 2002). Thus, women may be less successful negotiating safer sex with their authoritative male partners (Davila, 2002), and may subsequently be placed at increased risk for STIs/HIV. Within heterosexual relationships, men hold the power to engage in safer-sex practices. Holding power is most often demonstrated by men refusing to use condoms (Browne & Minichiello, 1994; Davila, 2002; Stephenson, Breakwell, & Fife-Schaw, 1993), accusing their partners of infidelity, or utilizing physical abuse in response to the females' suggestion of condom use (Davila, 2002; Wingood, Hunter-Gamble, & DiClemente, 1993).

The causes of power imbalance between men and women in relationships deserve attention, as it is expected that they play a role in the increased rates of HIV positive tests accounted for by women in the past decade (10.5% of HIV positive tests in 1996 were accounted for by women while this percentage increased to 25.4% in 2005) (PHAC, 2006a). Women who reported male dominance and control in their relationships were more likely to be HIV positive and more likely to report never having used a condom (Dunkle et al., 2004). Conversely, women reporting more sexual power were more likely to report condom use with partners (Gomez & Marin, 1996).

Relationships in Middle Eastern cultures tend to be patriarchal in nature (Joseph, 1996). Consequently, the existence of power inequities within intimate relationships may be especially high. Positive HIV tests among Middle Easterners[1] in Canada between 1998 to June 2006 comprised 2.5% of total positive tests among Canadians, excluding those with no ethnic group reported[2] (PHAC, 2006b), while the 2001 Census of Canada indicates that this ethnic group only made up 1.7% of the Canadian population (StatisticsCanada, 2005). In addition, reported AIDS cases in Canada among Middle Easterners between 1979 to June 2006 comprised 1.1% of total AIDS cases among Canadians, excluding those with no ethnic group reported (PHAC, 2006b). While HIV rates among Middle Easterners in North America are relatively low, these rates may be underestimated due to low rates of HIV testing, problems in defining and underreporting of this ethnic group, as well as underreporting of HIV status (Salome, 2005). No data regarding HIV testing in North America for this ethnic group was found, however, it has been suggested that testing rates are low among Middle Easterners in their home countries (Chemtob & Srour, 2005). Underreporting may be due to a 'culture of silence' and may also be especially high post-9/11 as a result of a reluctance to identify as a Middle Easterner or Arab (Salome, 2005). HIV/AIDS has also been found to be viewed by Middle Easterners as a disease 'others' become infected with (Kandela, 1993), thus not associating it with themselves. Twenty percent of Arab American participants in a study reported that AIDS in the Arab community was not very serious, while 16% indicated that it was not a problem at all (Kulwicki & Cass, 1994).

Adult incident HIV cases in North Africa and the Middle East have increased over the past few years, from 54,000 in 2003 (UNAIDS, 2006) to 68,000 in 2006 (UNAIDS/WHO,

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[1] Category included South Asians, West Asians, and Arabs
[2] Percentages of HIV positive tests were only calculated for those that reported their ethnicity. Between 1998 and June 2006, 14,306 HIV positive tests were reported by individuals who did not report their ethnicity, out of a total of 20,143 HIV positive tests.

2006b). The adult HIV prevalence rate remained constant at 0.2% in the above-mentioned regions during 2003 to 2005 (UNAIDS, 2006). However, certain countries in the North African and Middle Eastern region are exhibiting a rise in HIV prevalence rates (UNAIDS, 2006). For example, in 2005, the adult HIV prevalence rate was 1.6% in Sudan (UNAIDS/WHO, 2006b). Thus, with an increase in HIV prevalence rates among Middle Easterners in their home countries, we would expect a rise in HIV prevalence rates in the Middle Eastern-Canadian immigrant population as well. The 2001 Census of Canada indicates that 285,585 Canadian immigrants were born in West Asia and the Middle East, making up 5.2% of total immigrants (StatisticsCanada, 2006). HIV prevalence rates among immigrants and among citizens of Middle Eastern countries during at least two time points are currently unknown, although it is of interest.

It has been proposed that low prevalence rates do not necessarily translate into low risk (Jenkins & Robalino, 2003). Discussed in the Sufian (2004) report, if and when the HIV epidemic threshold (about 5% infection rate) is reached in the Middle Eastern population, rates will boom as was seen in Africa, and what is currently transpiring in China (UNAIDS/WHO, 2006a). This would occur once HIV-positive individuals infect more than one other person in the population during their lifetime (Sufian, 2004). Canada is home to 303,965 Middle Easterners (StatisticsCanada, 2005); preventing an increase in HIV rates in the Middle Eastern-Canadian population is crucial, and remains possible while rates are still low.

This study explores associations between gender- and culturally-bound exposures and risk factors as they relate to HIV-risk sexual behaviour in both Middle Eastern-Canadian women and men in heterosexual relationships. These factors may contribute to power imbalances and safer-sex decision-making inequities in relationships, potentially increasing one's risk of HIV (Wingood & DiClemente, 1998). Thus, these gender- and culturally-bound factors deserve

increased attention in order to better comprehend HIV rates, identify risk factors, and subsequently develop effective and relevant prevention strategies for Middle Eastern-Canadians. The theoretical framework and basis for this study is Connell's (1987) social Theory of Gender and Power (TGP) and its application to women and their risk for HIV by Wingood and DiClemente (2000). The sample consists of both women and men in order to compare them on the various risk factors for HIV.

The following review of the literature begins by briefly discussing Connell's (1987) TGP, and is followed by a summary of research reviewing each category of the theory and its application to HIV risk as it is relevant to this study.

2. LITERATURE REVIEW

2.1 The Theory of Gender and Power

Various theoretical models have been used to examine HIV risk among women, such as the Health Belief Model (HBM) (Buckingham, Moraros, Bird, Meister, & Webb, 2005; Roye & Seals, 2001), the Theory of Planned Behaviour (TPB) (Rannie & Craig, 1997; Sable & Libbus, 1998), and the Theory of Reasoned Action (TRA) (Sneed & Morisky, 1998; Wilson, Zenda, & Lavel, 1992). However, the constructs of power and gender were of interest to the author, and these theories, in the author's opinion, do not properly address the impact of power imbalance and the dyadic nature of heterosexual relationships. The TGP offers a comprehensive model that incorporates both power and gender, as well as most of the constructs included in the previously mentioned theories. Therefore, it was felt to be the most appropriate model for this study.

Connell's (1987) TGP is divided into three main interdependent categories that serve to explain the gendered relations between men and women—specifically the sexual division of labour, the sexual division of power, and the structure of cathexis. The structure of cathexis refers to social norms and emotional attachments that are present in and dictate relationships (Connell, 1987; Kershaw et al., 2006; Wingood & DiClemente, 2000). These categories—the sexual division of labour, the sexual division of power, and the structure of cathexis—work at two different levels: the societal and the institutional. At the societal level, mechanisms such as social norms favoring men continuously maintain power imbalances between the genders. Similarly, at the institutional level, mechanisms such as lack of employment equity between genders do the same through inequitable practices. Hence, these mechanisms perpetuate gender-based power imbalances between men and women, placing women in a position of vulnerability.

2.2 Application of the Theory of Gender and Power on Female HIV risk

Connell's (1987) TGP has been used as a theoretical framework in past studies focusing on HIV/STI prevention (Salazar et al., 2004; Sherman, Gielen, & McDonnell, 2000; St Lawrence et al., 1997); however, it has also been used in other areas, such as the construction of gender in newspaper coverage of male compared to female tennis players (Vincent, 2004), the exploitation of women in lawn bowling (Boyle & McKay, 1995), and the analysis of female singers and their lyrics (Danaher, 2005). Among the studies focusing on HIV/STI prevention, Wingood and DiClemente (2000) offer a concise overview of Connell's (1987) social TGP, and its relation to women's exposure and risk to HIV. Their application of the theory illustrates the mechanisms that negatively affect women's health by making them vulnerable to disease, such as HIV, by increasing their risk and exposure to its transmission. Wingood and DiClemente's (2000) application of the theory to HIV risk is used as the foundation of this study.

2.2.1 The sexual division of labour

It has been suggested that economic exposures such as living in poverty, having low education, being under or unemployed, having a stressful job, and having limited health access prevent women from achieving economic independence (Mumtaz, 1990; Wingood & DiClemente, 1998). Subsequently, women must rely on men for resources, thus limiting their autonomy within their relationships.

2.2.1.1 Living in poverty

Living in poverty ultimately translates into financial dependence on others, whether it be the government, family, friends, or partners. Financial dependence on one's partner may contribute to power imbalances in heterosexual relationships (Worth, 1990). Women who

depend on their male partners for financial security may acquiesce to requests of unprotected sex due to fear of losing their primary source of support (Davila, 2000). When faced with the choice of reducing potential HIV transmission or current financial security, most women choose the latter (Mays & Cochran, 1988).

Poverty may also force women into commercial sex work (e.g., prostitution) as a means of survival, thus increasing their risk of STIs and/or HIV infection, as condom use is not consistent in this population (Wee, Barrett, Lian, Jayabaskar, & Chan, 2004). Living in poverty seems to be associated with HIV-risk behaviour, compared to living without financial difficulties (Klein, Elifson, & Sterk, 2004). For example, women living in poverty are more likely to have concurrent sexual partners (Adimora et al., 2002), less likely to use condoms (Bankole, Darroch, & Singh, 1999), and more likely to have a HIV-risk partner (Dolcini & Catania, 2000). However, another study reported that condom use levels were higher among adults of lower income, compared to those with higher incomes (Anderson, Wilson, Doll, Jones, & Barker, 1999).

2.2.1.2 Employment status

Research findings related to employment status and HIV risk have been mixed. Two studies reported that unemployed respondents were less likely to consistently use condoms than those in school or those who were employed (Buchacz et al., 2001; Tawk, Simpson, & Mindel, 2004). However, another study indicated that unemployed individuals were more likely to report consistent condom use than employed ones (Kordoutis, Loumakou, & Sarafidou, 2000). A final study conducted among older women (≥ 50 years old) reported no differences at all between employment status and safer-sex practices (Paranjape et al., 2006). Other than age of participants, no major differences were found between the studies.

2.2.1.3 Education level

It is well-known that education level and HIV risk are negatively correlated. For example, research evidence supports the notion that being currently infected with an STI is negatively correlated with education level; that is, women with less than a high school diploma were more likely to report a current infection than women with higher education (Fleisher, Senie, Minkoff, & Jaccard, 1994). Inability to suggest condom use to one's partner has also been reported to be negatively correlated with education level (Langen, 2005). Similarly, higher education level seems to be associated with more condom use (Forste & Morgan, 1998; Saul et al., 2000; Sheeran, Abraham, & Orbell, 1999), more relationship power (Pulerwitz, Amaro, De Jong, Gortmaker, & Rudd, 2002), and getting tested for HIV (Hardy & Dawson, 1990). It therefore appears that level of education plays a significant role in safer-sex practices, and may empower women with the knowledge to protect themselves from STIs/HIV.

2.2.1.4 Having a stressful work environment

No research was found examining work-related stress and HIV-risk behaviour. However, there is evidence that women report more job stress than do men (McDonough & Walters, 2001). In addition, studies have reported associations between work stress or fatigue and other health risk behaviours, such as smoking (Kouvonen, Kivimaki, Virtanen, Pentti, & Vahtera, 2005; Lindstrom, 2004) and physical inactivity (among women) (Lallukka et al., 2004).

2.2.1.5 Having limited health access

Women who do not, or are not able to, access health services (specifically reproductive health services) may be at increased risk for HIV. It is well known that STIs physiologically facilitate the transmission of HIV (Fleming & Wasserheit, 1999); thus left untreated, STIs pose a

risk to women. Newly immigrated women may be especially vulnerable, as they may be less likely to get screened for STIs, such as via pap smears (Matuk, 1996).

Thus, economically disadvantaged women may have reduced financial power within their intimate relationships. The above-mentioned exposures increase women's vulnerability to become economically dependent on others and/or to lack resources necessary for safer-sex practices. This may be especially true for Middle Eastern women, who, through cultural and traditional norms, have been conditioned to accept economic inequities within relationships, as taking care of the family is deemed a more important responsibility than economic gain (Hijab, 1988).

2.2.2 The sexual division of power

Within the category of the sexual division of power, behavioural risk factors (i.e., having a history of alcohol and drug abuse, having poor assertive communication skills, having poor condom-use skills, having lower self-efficacy to avoid HIV, and having limited perceived control over condom use) contribute to one's risk of contracting HIV. Similarly, physical exposures (i.e., having a history of abuse, having a partner who disapproves of practicing safer sex, having a high-risk partner, having a greater exposure to sexually explicit media, and having limited access to school-based HIV prevention education) encompass factors that increase one's risk to HIV. Women exposed to these factors are less likely to hold authoritative influence and control in their relationships, thus reducing their power over safer-sex practices (Wingood & DiClemente, 1998).

2.2.2.1 Poor condom-use skills

It has been reported that behavioural interventions which included enhancing women's condom-use skills also increased consistent condom-use rates (Legardy, Macaluso, Artz, & Brill, 2005; Orr, Langefeld, Katz, & Caine, 1996). Similarly, lack of skills among women regarding the use of condoms have been found to decrease safer-sex practices (Abdool & Karim, 2001). Women are especially vulnerable to this behavioural risk factor, as they have been found to be less comfortable than males with the act of placing a condom on a penis (Murphy, Rotheram-Borus, & Reid, 1998).

2.2.2.2 Low self-efficacy to avoid HIV

Self-efficacy is defined as the belief that one can accomplish what one has set out to do (Bandura, 1977). Women who have higher levels of self-efficacy towards condom use are more likely to use them (Gomez & Marin, 1996). Similarly, individuals reporting low self-efficacy to practice safer sex reported engaging in more risky behaviour (O'Leary, Goodhart, Jemmott, & Boccher-Lattimore, 1992). Further, it has been reported that the higher a person's AIDS-related self-efficacy—the perceived ability that one can engage in protective behaviour against HIV/AIDS, such as being knowledgeable of one's partner's sexual history, and safer-sex self-efficacy—the perceived ability that one can negotiate condom use with their partner, the lower the high-risk practices (Awad, 2002), and the more likely one is to refuse unwanted sex (Sionean et al., 2002), respectively. However, one study reported no association between self-efficacy and condom use intentions (Harvey et al., 2006).

2.2.2.3 Poor assertive communication skills

It is evident that poor communication skills decrease the likelihood of engaging in safer-sex practices. For example, a study reported that the odds of consistently using a condom among women increased fivefold when they requested that their partners use them (Weisman, Plichta, Nathanson, Ensminger, & Robinson, 1991). Research has supported evidence that condoms are more likely to be used following a discussion regarding contraception (Coleman & Ingham, 1999). Similarly, other studies have reported that the less women communicated with their partners with regard to sexual issues and other matters such as finances, the less likely they were to use condoms (Klein et al., 2004; Wingood & DiClemente, 1998). Females are especially placed at risk for HIV, as they are less likely than males to use sexual negotiation techniques (Rosenthal et al., 2003). However, research has reported that women negotiate less aggressively than men in other domains as well, such as in salary settlements (Kaman & Hartel, 1994). Thus, it may be that women have more difficulty than men negotiating in various aspects of their lives.

2.2.2.4 Having a history of alcohol and drug abuse

The association between substance use and HIV-risk behaviour has been well-established. For example, it has been reported that symptoms of problem drinking (alcohol dependency) were associated with reporting having an STI (Ericksen & Trocki, 1992). Lifetime injection drug use has also been found to be associated with HIV infection (Chawarski, Mazlan, & Schottenfeld, 2006). Similarly, being a recent methamphetamine user has also been found to be associated with high-risk sexual behaviour, such as having multiple sexual partners and having an injection drug user as a partner (CDC, 2006). Having a history of substance abuse may reduce levels of self-control and autonomy (Lyvers, 2000), which may decrease power in one's relationship or be indicative of high-risk behaviour, in general.

In the case of substance use, men are more likely to engage in it than are women (Adlaf, Begin, & Sawka, 2005; McDonough & Walters, 2001; Ndinya-Achola et al., 1997). However, both male and female substance use is associated with the risk of abuse committed against the female partner (El-Bassel, Gilbert, Rajah, Foleno, & Frye, 2000; Miller, 1990); which as later discussed, places the victim at risk for HIV transmission.

2.2.2.5 Limited perceived control over condom use

Perceived control over condom use refers to the perception of one's ability to convince their partner to use a condom. Research has reported that women who did not feel that they had control, or the right, to insist on using condoms did not act on their knowledge of HIV risk and were thus less likely to practice safer sex (Abdool & Karim, 2001).

2.2.2.6 A history of sexual or physical abuse

One out of three women worldwide reported having experienced sexual and/or physical abuse (Heise, Ellsberg, & Gottemoeller, 1999). For example, in 1995-1996, 34% of Egyptian women indicated that they have been victims of physical abuse by an intimate male partner, and in 1993, 29% of Canadian women indicated the same (Heise et al., 1999). Gender-based violence is perpetuated by many cultures' norms and beliefs that subordinate women (Heise et al.), thus increasing their health risks. It has been reported that women who have experienced abuse are consequently placed at higher risk of being infected with an STI/HIV (Dunkle et al., 2004; Heise et al., 1999; Wu, El-Bassel, Witte, Gilbert, & Chang, 2003). Women reporting the experience of forced sex or intimate partner abuse also reported higher levels of sexual risk-taking, such as having multiple sexual partners or having a high-risk partner (Biglan, Noell, Ochs, Smolkowski, & Metzler, 1995; Wu et al., 2003). Similarly, abusive men have been found

to be more likely than non-abusive men to engage in HIV-risk behaviour, such as having numerous sexual partners, having unprotected anal sex, and having sex with someone who has injected drugs (El-Bassel et al., 2001). Partners involved in abusive relationships are less likely to use condoms (Wingood & DiClemente, 1998; Wu et al., 2003), thus increasing their risk of HIV transmission (Beadnell, Baker, Morrison, & Knox, 2000; Hoffman, O'Sullivan, Harrison, Dolezal, & Monroe-Wise, 2006; Wingood et al., 1993). It has been reported that women who have experienced abuse tend to leave sexual decision-making to their male partners (Gomez & Marin, 1996). Thus, not surprisingly, research has reported an association between partner abuse and women's HIV serostatus (van der Straten, King, Grinstead, Serufilira, & Allen, 1995). Women may also be placed at increased risk of HIV through nonconsensual sex in abusive relationships (Davila, 2000), as men may not be likely to use condoms during forced sex (Novak & Karlsson, 2005). Also, research has reported that survivors of child abuse are more likely to indicate the following HIV risk factors: employment as a sex worker, having a history of sex with a stranger, having multiple partners, not finishing high school, and heavily consuming alcohol (Zierler et al., 1991).

The threat of physical, psychological, or sexual abuse may decrease the victimized partner's sense of control in the relationship. The threat and fear of abuse may lead to the sexual passivity or non-resistance of the victimized partner (Beadnell et al., 2000; Biglan et al., 1995; El-Bassel et al., 2000; Rhodes & Cusick, 2002), thus decreasing the probability of engaging in safer-sex practices (Langen, 2005). Conversely, females who reported low fear of negotiating condom use with their partner were more likely to consistently refuse unwanted sex (Sionean et al., 2002). Psychological abuse may also be used by a partner to gain power in the relationship, thus decreasing the other partner's control over safer-sex practices (Davila, 2002). For example,

Davila (2002) reported that a participant felt it was easier to engage in unprotected sex with her high AIDS-risk husband than to go through the verbal abuse that would negatively affect her self confidence.

2.2.2.7 Having a steady high-risk sexual partner

For a woman, having a risky partner is associated with the decreased likelihood of being able to refuse unwanted sex or sex without a condom (Dolcini & Catania, 2000). In addition, women who report having a high-risk sexual partner are placed at risk for STI/HIV because they have an increased probability of encountering the virus. For example, having multiple sexual partners in the past five years is associated with reporting having an STI (Ericksen & Trocki, 1992), and men are repeatedly found to have more sexual partners in the past than women (Caron, Davis, Halteman, & Stickle, 1993; Dolcini et al., 1993; Hoffman et al., 2006; Myers, Bullock, Calzavara, Cockerill, & Marshall, 1997; Ndinya-Achola et al., 1997). Consistent condom use has also been found to be low among individuals with multiple past partners (Dolcini et al., 1993). Men are also more likely than women to report having multiple concurrent relationships (Lary, Maman, Katebalila, McCauley, & Mbwambo, 2004). However, this ultimately increases the woman's risk of encountering HIV, since the probability of engaging in sex with a newly infected (and highly infectious) partner increases with their accumulation of concurrent partners.

The more risk behaviour reported by men, such as ever having a one-night stand and ever having used street drugs, the less likely they were to report protecting themselves from STIs (Forste & Morgan, 1998). In addition, men are more likely than women to engage in sex with a sex worker (Bruhin, 2003), and research has reported that almost half of the male respondents

were inconsistent condom users with sex workers (Wee et al., 2004), thus placing their female partners at increased risk of coming into contact with HIV.

2.2.2.8 Having a partner who disapproves of practicing safer sex

Research has reported that the odds of a woman consistently using a condom increased fourfold when they had a partner who was supportive of using one (Weisman et al., 1991); whereas women whose partners resisted using condoms were more likely to report non-condom use (Choi, Roberts, Gomez, & Grinstead, 1999; Wingood & DiClemente, 1998).

2.2.2.9 A greater exposure to sexually explicit media

Sexually explicit media frequently degrades women by objectifying them into sexual entities, illustrating male control over female bodies (D'Emilio & Freedman, 1988), and very rarely referring to the use of safer-sex practices (Lowry & Shidler, 1993). Men are more likely to watch pornography than women (Hald, 2006), and exposure to such media can often lead to men dominating a sexual encounter, and by extension, his female partner, which may result in high-risk sexual behaviour (Zillmann & Bryant, 1988).

It has been reported that adolescents exposed to x-rated movies were more likely to hold negative views regarding contraception use, to have multiple sexual partners, to engage in sex without using contraception, to desire conceiving a child, and to be infected with an STI (Wingood et al., 2001). Thus, exposure to explicit media may increase women's HIV risk through their participation in unsafe sexual practices and increase the likelihood that their partners are at high risk for STI/HIV.

2.2.2.10 Limited access to school-based HIV prevention education

STI/HIV interventions implemented into schools have been shown to increase condom use among students and decrease the frequency of sex without a condom (Kirby et al., 2004; Tremblay & Ling, 2005). However, findings have been mixed regarding HIV education and its impact on males and females. Specifically, Tremblay and Ling (2005) reported that HIV/AIDS education at school increased abstinence and condom-protected intercourse among students aged 14-22 years old, more so among females than among males. In addition, Kirby and colleagues (2004) reported that, compared to standard knowledge-based curriculum and activities, an HIV-education intervention which included interactive activities such as refusing sex and condom-use communication, increased condom use among grade nine students. The impact was larger on males than females in this case.

2.2.3 The structure of cathexis

Wingood and DiClemente (1998) suggest that women's sexual practices are very often viewed through social norms and expectations. These restraints may limit women's decision-making power with regard to safer-sex practices. For example, women have reported not using or carrying condoms because it made them feel 'sexually available' or 'loose' (Fullilove, Fullilove, Haynes, & Gross, 1990). The structure of cathexis outlines laws, social norms, and prohibitions that shape what is 'normal' within relationships. As discussed by Wingood and DiClemente (2000), social exposures (i.e., having an older partner, a desire to conceive, having conservative cultural and gender norms, having a religious affiliation that forbids the use of contraception, having a strong mistrust of the medical system, and having family influences that are not supportive of HIV prevention) place women at risk for HIV by restraining them from making objective sexual decisions. Similarly, personal risk factors may decrease the perception

of importance regarding safer-sex practices and HIV risk, and may have been shaped by traditional or stereotypical gender norms. These personal risk factors include having limited knowledge of HIV prevention, having negative beliefs that are not supportive of safer sex (Timmons & Sowell, 1999), having a perceived invulnerability to HIV/AIDS, and having a history of depression or psychological distress.

2.2.3.1 Family influence that is not supportive of HIV prevention

Families can have a large influence on women and their sexual behaviour. For example, adolescent females were more likely to lose their virginity during the study duration if they lived with a single mother, compared to females living with both their natural parents (Newcomer & Udry, 1987). For both adolescent males and females, they were more likely to lose their virginity during the study timeline if they had moved from a two-parent family composition, to a single-mother one, compared to adolescents who had remained with their natural two parents (Newcomer & Udry, 1987). Another study reported that adolescent females were less likely to transit from being a virgin to losing her virginity during the study duration if their mothers were highly educated, were still married to and living with natural father, and who were not very sexually active as adolescents (Udry & Billy, 1987).

In addition, sexual communication between a parent and their child may decrease sexual-risk behaviour. For example, it has been reported that mother-daughter communication with regard to sexual risk was negatively associated with frequency of intercourse and unprotected intercourse among daughters (Hutchinson, Jemmott, Jemmott, Braverman, & Fong, 2003). Similarly, female adolescents reporting less communication regarding sexual health with their parents are less likely to use condoms (DiClemente et al., 2001).

2.2.3.2 A strong mistrust of the medical system

Lipson and Meleis (1983) discuss the issue that Middle Easterners value the concept of privacy from strangers, or those not very well-known to them. Thus, recent Middle Eastern immigrants may be wary of North American health professionals when being asked personal information, especially if they are refugees or illegal residents—from fear of information being sent to immigration officials (Lipson & Meleis, 1983). In addition, Muslim women have reported that they avoided gynecological screening due to the perception that American physicians are not sensitive to Islamic moral codes that place value on bodily privacy (Matin & LeBaron, 2004). Not surprisingly, this limits their health care experience, and may reduce gynecological screening practices among this group. However, one study found that women expressing mistrust against the HIV scientific community were more likely to get tested for HIV during their pregnancy compared to those who expressed trust (Walter et al., 2001). It was suggested that testing among this group was influenced by other factors, such as physicians' recommendations to get tested (Walter et al., 2001).

2.2.3.3 Conservative gender and cultural norms and traditional beliefs

Traditional gender norms are at the root of many power imbalances within heterosexual relationships. Male dominance is a key feature of traditional gender norms, especially in Middle Eastern populations (AbuKhalil, 1997). It is such norms that encourage men to engage in high-risk sexual behaviour, such as having concurrent partners, and expecting women to allow males to control them, which many do so willingly (AbuKhalil, 1997). Women who hold traditional gender norms and believe that a woman should 'serve' her man have reduced ability to negotiate within their sexual relationships (Lary et al., 2004), specifically with respect to negotiating safer sex. In addition, Middle Eastern women may find it difficult to discuss taboo issues, such as

sexuality and HIV, with others (Salome, 2005). For example, Muslim women have reported difficulties in participating in gynecological screening as a result of feeling embarrassed, modest, and physically vulnerable, as Islamic moral codes value bodily privacy (Matin & LeBaron, 2004). Sexual health discussions may even be limited between an Islamic mother and her daughter, as it is assumed that the daughter is a virgin until marriage (Matin & LeBaron, 2004).

On the other hand, women with non-conservative beliefs towards gender roles seem to have more control over safer-sex practices. For example, females scoring high on nontraditional attitudes toward the gendered double standard were more likely to suggest and provide condoms (Caron et al., 1993). Similarly, those who reported male control in relationships as non-normative were more likely to refuse unwanted sex (Sionean et al., 2002).

Research on Hispanic men and gender role beliefs indicated that those who held traditional beliefs were more likely to engage in coercive sexual behaviour (Marin, Gomez, Tschann, & Gregorich, 1997). Men of various ethnicities who scored high on traditional male role attitudes were more likely to report more sexual partners in the past, report inconsistent condom use, and hold negative attitudes towards condoms (Pleck, Sonenstein, & Ku, 1993). Similarly, men who supported inequitable gender norms were more likely to report having an STI, refraining from using contraception, and using sexual and physical force against their partner (Pulerwitz, Barker, Segundo, & Nascimento, 2006).

Gender-based violence, previously discussed, may stem from traditional gender norms that give men the 'right' to use violence against a 'disobedient' female partner (Lary et al., 2004). For example, Heise and colleagues (1999) at the Center for Health and Gender Equity (CHANGE) compiled female and male responses regarding wife-beating rationales. They found that 40% of females in urban Egypt approved of wife-beating if she neglected the children and/or

house, 57% approved of wife-beating if she refused her husband sex, and 59% agreed if she answered back to her husband or disobeyed him. These rates were even higher when the questions were asked of women in rural Egypt.

It must be noted that the construct of holding traditional culture and gender norms intersects with others such as mistrust of the medical system and discussions regarding safer-sex practices with parents. However, intersecting constructs (e.g., discussing safer sex with parents) deserve separate attention as they are specific to the topic at hand, HIV risk. The issues of culture and gender cannot be explored in isolation, as they influence and shape behaviour, attitudes, and beliefs. Thus, it is important to examine those shaped behaviour, attitudes, and beliefs separately, in relation to HIV risk.

It is evident that traditional gender and cultural norms contribute to power imbalances in heterosexual relationships by reinforcing male dominance and female submissiveness. Sexual relationships that include a dominant man and a submissive woman have been shown to increase the risk of not using condoms (Holland, Ramazanoglu, Sharpe, & Thomson, 1998). In a non-egalitarian relationship, the assumption that condom use and the initiation of sex is decided by the man—which is strengthened by gender norms—places those involved at risk for HIV (Morokoff, Quina, Harlow, Whitmire, Grimley, et al., 1997).

2.2.3.4 Relationship consisting of an older male and a younger female

It has been reported that out of a group of South African women who indicated that they had not suggested condom use to their partner, most of them had partners who were older by ten or more years and men found it easier to refuse condom use when their partners were younger by ten or more years (Langen, 2005). In another study, conducted in Greece, consistent condom use was higher in relationships with no more than two years difference between the partners

21

(Kordoutis et al., 2000). A study conducted among adolescents in Nova Scotia reported that females with partners who were older by four years or more were less likely to have used condoms during last intercourse and more likely to have had more than one partner in the last year (Langille, Hughes, Delaney, & Rigby, 2007). Thus, it seems that in general, females with older partners are at increased risk for STI/HIV. However, a Zambian study reported that condom use increased as age difference also increased; in particular, with the male being older (Benefo, 2004).

2.2.3.5 A desire or a partner who desires to conceive

Women reported that they did not suggest condom use to their partner because they wanted to get pregnant (Langen, 2005). Similarly, women whose partners desired to become fathers were less likely to report condom use (Wingood & DiClemente, 1998). Thus, a desire to have a child may reduce the likelihood of using condoms.

2.2.3.6 Religious affiliation that forbids use of contraception

Religion is the foundation for values, norms and beliefs for many individuals, and may influence women's decision-making choices with regard to sexual practices. Religion has been found to be a reason why some women do not suggest condom use to their partner (Langen, 2005). For instance, the Islamic religion forbids the use of contraception (Antes, 1989). In addition, higher rates of polygamy—condoning concurrent partnerships—have been reported among Muslims compared with Christians (Lagarde et al., 2000). As suggested in one study, women in polygamous marriages have reduced negotiating power (Clark, Bruce, & Dude, 2006) and it has also been reported that, in comparison to women in monogamous marriages, women in polygamous marriages tend to be less educated, have more relationship problems, and score

higher on depression scales (Al-Krenawi & Graham, 2006). Polygamous marriages are still

practiced in many places, such as Africa, Haiti (Clark et al., 2006), and Canada (Campbell et al.,

2005).

However, research has found that countries comprised of religions (e.g., Muslim) that

forbid premarital or extramarital sex (Antes, 1989) tend to have lower prevalence of HIV/AIDS

(Gray, 2004; McIntosh & Thomas, 2004). Similarly, the more religiosity women reported, the

less they were at risk for HIV, measured by their own and their partner's high-risk behaviour

(Klein et al., 2004).

2.2.3.7 Limited knowledge of HIV prevention

It has been reported that as individuals scored higher on AIDS knowledge, their high-risk

behaviour decreased (Awad, 2002). Having limited knowledge of HIV and HIV prevention may

increase one's risk via risky sexual behaviour. For example, individuals who are perceived to

possess desirable or similar traits as one's self may be viewed as being HIV-negative and those

that are perceived to possess undesirable or dissimilar traits as HIV-positive. This increases the

risk of HIV transmission as these beliefs are purely subjective (Maticka-Tyndale, 1992), and

illustrates poor knowledge on the part of the individual making such assumptions. Similarly,

individuals who feel they 'know' their partner, such as their sexual history, may be less likely to

engage in safer-sex practices (Stephenson et al., 1993), thus increasing their HIV risk. One study

conducted among Arab university students in United Arab Emirates reported that males were

more knowledgeable about HIV/AIDS than females (Ganczak et al., 2007).

2.2.3.8 Negative beliefs not supportive of safer sex

Research has reported that women who held negative perceptions of condom use were more likely to have a history of STIs (Semaan, Lauby, O'Connell, & Cohen, 2003). It has also been reported that those who held more positive attitudes towards condom use had stronger intentions to use them (Delaney, Langille, Richardson, & Beazley, 1997) and were more likely to use them (Caron et al., 1993; Gomez & Marin, 1996; Sheeran et al., 1999). Among men, reasons for not using condoms included reduced pleasure (Busulwa et al., 2006), reduction in penile sensation, and interruption of 'being in the heat of the moment' (Flood, 2003).

2.2.3.9 Perceived invulnerability to HIV/AIDS

Worrying about contracting HIV is associated with reporting condom use (Gomez & Marin, 1996; Sheeran et al., 1999). Similarly, a study reported that women not using condoms, but who exhibited risk behaviour, did not feel like they were exposed to HIV (Harlow, Quina, Morokoff, Rose, & Grimley, 1993). Thus, perceived invulnerability to contracting HIV may decrease the use of safer-sex practices.

2.2.3.10 History of depression or psychological distress

Individuals reporting symptoms of depression are less likely to use condoms (Brown et al., 2006; Marin, Gomez, & Tschann, 1993). Research has also reported that depression was associated with sexual risk behaviour, such as not using condoms during sex (Lehrer, Shrier, Gortmaker, & Buka, 2006) and exchanging sex for money or drugs (Edwards, Iritani, & Hallfors, 2006). Associations between post-traumatic stress disorder (PTSD) and transactional sex, and PTSD and previous treatment for an STI has also been reported (Smit et al., 2006).

2.3 Acculturation

It was felt that the construct of acculturation was important and needed to be examined along with the application of the TGP. It must be noted that acculturation is interdependent with constructs already covered by the application of the TGP (Wingood & DiClemente, 2000), such as religiosity and traditionalism, but offers another dimension as well. Identifying with an ethnic group involves more than just adopting its religion, attitudes, and values. Identification also involves the use of language, behaviour, and participation in traditions, such as eating ethnic foods and celebrating ethnic holidays, which may be quite prominent in the Middle Eastern/Arabic population. Thus, measuring acculturation allows us to explore the level of identification to a culture, and its influence on HIV-risk behaviour.

Acculturation refers to the extent to which an individual who identifies with an ethnic group adopts another culture's norms, values, language, beliefs, and culturally normative behaviour (Berry, Trimble, & Olmedo, 1986; Raffaelli, Zamboanga, & Carlo, 2005). It is important to note that while acculturation is an extensive construct, it applies to the proposed research because it may play a role in sexual behaviour and must be examined in order to obtain a more comprehensive analysis of HIV risk. The following review of the literature thus serves to provide a brief overview of the research area.

Various methods have been employed to measure acculturation, including language measures (Adam, McGuire, Walsh, Basta, & LeCroy, 2005; Hahm, Lahiff, & Barreto, 2006; Rojas-Guyler, Ellis, & Sanders, 2005), ethnic identity questions measuring respondents' engagement in their ethnic culture or the mainstream culture (Le & Kato, 2006), or combinations of these methods (Raffaelli et al., 2005; So, Wong, & DeLeon, 2005).

Varying levels of acculturation may mediate HIV-risk factors, such as those discussed throughout this paper. For example, Mexican and Puerto Rican men living in California who reported greater acculturation also reported increased HIV knowledge (Loue, Cooper, & Fiedler, 2003). Furthermore, research on Black Caribbean men living in the United Kingdom reported that lower acculturation scores were associated with increased risk of gonorrhea infection (Ross, Tariq, Ghanem, & Gilleran, 2003). Similarly, Cuban-American respondents who reported high ethnic identity also reported higher levels of sexual risk behaviour, such as having four or more lifetime sexual partners (Raffaelli et al., 2005). Asian-Americans who reported high acculturation scored high on HIV knowledge, however, the high-acculturated respondents also reported more sexual risk behaviour, such as engaging in substance use before having sex or having sex without a condom (So et al., 2005). However, other studies reported that levels of acculturation did not predict risky sexual behaviour (Ibanez, Van Oss Marin, Villareal, & Gomez, 2005; Le & Kato, 2006). Clearly, research studying the relation between acculturation and HIV risk has been mixed, however, this may be due to the different ways acculturation has been measured. To date, there has been no research investigating acculturation and HIV risk among Middle Easterners.

3. STUDY RATIONALE

The three categories making up the TGP (Connell, 1987)—the sexual division of labour, the sexual division of power, and the structure of cathexis—are interdependent and take into account the factors that characterize gendered relationships. They are interdependent in that they collectively help to explain the mechanisms that contribute to power imbalances between men and women. The theory attempts to integrate gender and culture to help explain heterosexual relationship patterns and power imbalances within them. Wingood and DiClemente's (2000) application of the TGP (Connell, 1987) among African American women and HIV risk is unique in that it identifies gender- and culturally-bound factors that interact to predict sexual risk practices via power imbalances within intimate relationships.

While several studies have focused on the associations between gender- and culturally-based factors and HIV-risk behaviour in heterosexual relationships, few researchers have looked at these associations in one comprehensive study. In addition, while Wingood and DiClemente (2000) have applied their extension of the TGP to African American women, the present study aimed to extend this application to examine gender- and culturally-specific factors and HIV-risk behaviour among Middle Eastern-Canadians within relationships. What is also unique in the present study is the inclusion of the acculturation variable, which was not explored in Wingood and DiClemente's (2000) paper.

It is crucial to investigate the association between gender- and culturally-based factors and HIV-risk behaviour among Middle Easterners for several reasons. First, examining gender- and culturally-based factors within heterosexual relationships helps to explain differences in the frequency of engaging or not engaging in safer-sex practices. Second, while HIV rates are low

among Middle Eastern-Canadians, preventing them from reaching threshold levels by identifying

risk factors is important. Third, applying the TGP (Connell, 1987) to women and men may help

to clarify gender differences within this population with regard to HIV-risk behaviour.

The practical implications of the present study's analyses focus on attaining equitable

socioeconomic status, relationship interactions, and gender norms. For example, if economic

inequity is found to be a significant correlate of unsafe sex, accessible adult education programs

for immigrant women may increase employment opportunities and financial autonomy.

Similarly, if relationship inequity is found to be a significant correlate of unsafe sex, community-

based interventions focusing on empowering women through behavioural means, such as

offering condom use and assertive communication skill workshops, may help to increase

women's ability to make sexual decisions. Lastly, if gender norm inequity is found to be

correlated with unsafe sex, promoting equitable norms among genders through education, such

as through a workshop specific to men, may aid to create such equity between women and men

in intimate relationships.

4. RESEARCH OBJECTIVES

1. To determine if gender- and culturally-based risk factors as outlined by Wingood and DiClemente's (2000) application of the TGP, are associated with HIV-risk behaviour.

- o *Hypothesis 1*: Respondents who report or score high on the risk factors comprising the sexual division of labour (independent variables) will be more likely to report HIV-risk behaviour (dependent variables), due to power imbalances in their relationships. Specifically, it is hypothesized that participants who report or score high on the following variables will be more likely to report risky sexual behaviour:

  - living in poverty

  - having low educational attainment

  - having limited access to health care

  - having high job stress and low job control

- o *Hypothesis 2*: Respondents who report or score high on the risk factors comprising the sexual division of power (independent variables) will be more likely to report HIV-risk behaviour (dependent variables), due to power imbalances in their relationships. Specifically, it is hypothesized that participants who report or score high on the following variables will be more likely to report risky sexual behaviour:

  - having poor condom-use skills

  - having poor communication skills

  - having a history of alcohol and drug abuse

  - having a history of sexual or physical abuse

  - having a steady high-risk partner

- *Hypothesis* 3: Respondents who report or score high on the risk factors comprising the structure of cathexis (independent variables) will be more likely to report HIV-risk behaviour (dependent variables), due to power imbalances in their relationships. Specifically, it is hypothesized that participants who report or score high on the following variables will be more likely to report risky sexual behaviour:
    - having conservative gender and cultural norms and traditional beliefs
    - having a desire or whose partner desires to conceive
    - having limited knowledge of HIV prevention
    - having a perceived invulnerability to HIV/AIDS
- *Hypothesis* 4: Risk factors from the sexual division of labour, power, and the structure of cathexis that are found to be associated with HIV-risk behaviour, will be predictive of the number of lifetime sexual partners and the frequency of condom use (dependent variables).

2. To identify gender differences within the Middle Eastern-Canadian population with regard to HIV-risk factors.

- *Hypothesis 5*: Women will report more risk factors than will men, as Middle Eastern women will be more affected by power imbalances than men within their relationships.

3. To determine, through exploratory analyses, if acculturation is associated with HIV-risk factors.

- *Exploratory hypothesis 6*: Respondents who score low on acculturation—Middle Easterners resisting the adoption of Canadian values, beliefs and behaviour—will report more risky sexual behaviour than those scoring high on acculturation, as Middle Eastern

traditional norms will remain highly influential in low-acculturated respondents. Specifically, it is hypothesized that:

- low-acculturated males will report more sexual partners

- low-acculturated respondents will report less frequent use of condoms during sexual intercourse

5. METHODOLOGY

The proposed study involved primary data collection and analysis. The following sections outline the procedures and analyses conducted for this research.

5.1 Design

A cross-sectional, web-based survey was used as the method for data collection. However, initially, a web-based survey and a mail survey were to be used as the methods for data collection (see Appendix A for mail survey procedures and documents), in order to capture both computer literate and non-computer literate individuals, as well as very conservative and non-conservative individuals. Research has indicated no difference in health status or health behaviour reporting between online and paper questionnaires (Mangunkusumo et al., 2005). However, the mail surveys were not utilized due to problems in recruiting participants from religious groups (see section 5.2.2 for further discussion). Data from each participant was collected during a single period in time (less than an hour).

5.2 Population and Sample

5.2.1 Population and sample characteristics and eligibility criteria

The population of interest was Middle Eastern individuals living in the greater Toronto area (GTA), Montreal, Waterloo, and Vancouver, currently in a relationship, heterosexual, and aged 18-35 years.

The targeted sample was Middle Easterners living in Canada. The eligibility criteria for the participants were as follows, participants must have been:

o aged 18-35 years,

- o of Middle Eastern and/or Arab descent[3],

- o living in Canada,

- o able to comprehend, read, and write English,

- o heterosexual, and

- o in a current relationship. Current relationships must have been of a duration of at least 21 days, as research has found that condom use tends to be similar in a new relationship (once it reaches 21 days) to an established relationship (Fortenberry, Tu, Harezlak, Katz, & Orr, 2002).

5.2.2 Recruitment

Participants were recruited using various methods: by advertising the survey link on two Middle Eastern online community websites (http://www.redwhitegreen.com/ (with a membership level of approximately 300 individuals) and http://www.arabtoronto.com/), advertising the survey link using posters throughout Middle Eastern organizations (refer to Appendix B), advertising in a Middle Eastern community newspaper (refer to Appendix C), contacting Middle Eastern/Arab organizations/clubs via websites (e.g., Facebook, Canada Palestine Association), advertising to religious groups via group members and the author, and by word of mouth advertising to the Middle Eastern community. Word of mouth was accomplished via the use of members from the study's community advisory committee (see section 5.4.2 for more detail on the community advisory committee). Most of the religious groups contacted did not reply regarding participation in the study; two groups replied indicating that none of the members would be eligible to participate, thus not informing their members.

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[3] We did not want to define this ethnic group by countries, as not everyone agrees on the definitions. In addition, we did not want to exclude people from various countries if they considered themselves to be of either Middle Eastern or Arab descent. We have tried to use the broadest term possible to be most inclusive without listing all countries in the region.

Participants were also given the suggestion, at the end of the survey, to pass on the study's email address, relationships@ahsmail.uwaterloo.ca, or the survey link to friends who might be eligible and interested in completing the survey.

5.2.3 Remuneration/incentives

Respondents who completed the survey were eligible for inclusion in an incentive draw. At the start of the survey, participants were advised that if they complete the survey, they would have the choice of entering a draw to win a $25 online gift certificate to Amazon.ca. They were advised that they would have had a 1/15 chance of winning. Participants entered the draw by emailing the study's email address, surveydraw@ahsmail.uwaterloo.ca, (which appeared at the end of the survey) and providing their contact information. They were also advised that it was not possible to link their email address to the survey answers because they were required to go to a different online location to leave their contact information.

Entering the draw was optional and a total of thirteen participants entered it. Due to the low number of entries, all thirteen participants were contacted and were sent their electronic gift certificates via email. Anonymity was obviously very important to the study sample, and illustrates that the incentive offered was clearly not the reason individuals chose to participate.

5.3 Data Collection

The online survey was originally pilot-tested among five Middle Eastern individuals and took approximately 20 minutes to complete (range 17-25 minutes). After adding preambles to the survey, the average amount of time required was extended to approximately 22 minutes. Table 1 indicates the hypothesized variables in association with HIV risk, outlined by Wingood and DiClemente (2000), that were measured via the online survey for the study.

Table 1. Application of the Theory of Gender and Power

THE SEXUAL DIVISION OF LABOUR	
Economic exposures	
Living in poverty	
Having low education	
Being under or unemployed	
Having a stressful job	
Having limited health access	

THE SEXUAL DIVISION OF POWER	
Behavioural risk factors	**Physical exposures**
Having a history of alcohol and drug abuse	Having a history of abuse
Having poor assertive communication skills	Having a partner who disapproves of practicing safer sex
Having poor condom-use skills	Having a high-risk partner
Having low self-efficacy to avoid HIV	Having a greater exposure to sexually explicit media
Having limited perceived control over condom use	Having limited access to school-based HIV prevention education

THE STRUCTURE OF CATHEXIS	
Social exposures	**Personal risk factors**
Having an older partner	Having limited knowledge of HIV prevention
Having a desire to conceive	Having negative beliefs that are not supportive of safer sex
Having conservative cultural and gender norms	Having a perceived invulnerability to HIV/AIDS
Having a religious affiliation that forbids the use of contraception	Having a history of depression or psychological distress
Having a strong mistrust of the medical system	
Having family influences that are not supportive of HIV prevention	

EXTENSION OF THEORY	
Acculturation	

5.3.1 Measures

The majority of the survey measures were chosen to assess the constructs of the TGP (Connell, 1987), and its application to women and HIV risk (Wingood & DiClemente, 2000). The remaining measures were chosen for demographic and sexual behaviour purposes. Refer to Appendix D for the eligibility questions and Appendix E for the survey.

5.3.1.1 Eligibility questions

Participants were asked if they are of Middle Eastern/Arabic descent, current age, if currently in a relationship, sexual identity, and if currently living in Canada. See Appendix D for the specific questions posed.

5.3.1.2 Demographics

Participants were asked where they heard about the survey, their family's country of origin, place of birth, age arrived in Canada if born elsewhere, current immigration status if born elsewhere, current city of residence, gender, current relationship status, current marital status, duration of current relationship, and partner's or his/her family's country of origin. See questions 1-7 and 15-18 in Appendix E. A social desirability scale was also included in order to detect socially desirable responders. The 10-item Marlowe-Crowne Social Desirability Scale Version 2 (M-C 2) (Strahan & Gerbasi, 1972) was used for this purpose. Internal consistency (Kuder-Richardson reliability estimate, Formula 20) for this scale was tested among male university students (0.62), female university students (0.75), female college students (0.49), and British males (students and non-students) (0.62) (Strahan & Gerbasi, 1972). Participants were asked to respond with a true or false for each statement. See question 32 in Appendix E.

5.3.1.3 Sexual behaviour

Participants were asked to indicate the number of people they have ever had sexual intercourse with, if a condom was used during the last time they had sex, and frequency of condom use. These three questions were the study's original dependent variables. See questions 66-68 in Appendix E. However, during analyses, the dependent variable 'condom use during the last time they had sex' was excluded from analyses, as it was felt that this variable would not tell

us if the 'last time' was a unique event or not, and the participants' responses may not be their usual behaviour, whereas the variable 'frequency of condom use' would give us information on behaviour that occurs on a regular basis. In addition, the variable 'condom use during the last time they had sex' was found to be associated with social desirability (see section 6.2.2), thus results regarding this variable may not be accurate and may be skewed towards socially desirable responses. Finally, research on sexual behaviour more commonly used 'frequency of condom use' as their dependent variable (Harvey, Bird, Galavotti, Duncan, & Greenberg, 2002; Maswanya et al., 1999; Soler et al., 2000).

5.3.1.4 Acculturation

Acculturation, which is not included in the original application of the TGP, was assessed using a 12-item scale created by the author. Questions were derived from several scales, the Short Acculturation Scale (Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987), the Perceived Parental Acculturation Behaviours Scale (Henry, Biran, & Stiles, 2006), and the Male Arab Acculturation Scale (Barry, 2005). The scale was pilot-tested among twelve Middle Easterners (eight females and four males), with a mean age of 24.3 years. Internal consistency was calculated and produced a Cronbach's α of 0.59. The scale was revised, one question was removed due to poor face validity (increasing Cronbach's α to 0.63), and two more language questions were included after the pilot-testing. The questions were answered on a five-point scale, from zero (never) to four (always). See question 27 in Appendix E.

5.3.1.5 Sexual division of labour

Living in poverty. Participants were asked the number of people living in their home, the number of dependents they cared for living in their home, if they currently lived with their parents,

parental gross income for 2006 if still living or being supported by them, main source of personal income, and personal and household gross income for 2006. Poverty was defined as follows: incomes[4] were grouped as falling under or above the poverty line outlined by Statistic Canada, taking into account family size and population of community residence (StatisticsCanada, 2006). However, if any of the above variables (i.e., family size, city of residence, income) were missing (or participant reported 'don't know' for household income), observations were coded into a missing category. See questions 8-9, 11, and 21-24 in Appendix E.

Employment status. Participants were asked their current work situation and if they felt that they were overqualified for their job. See questions 20 and 26 in Appendix E.

Education level. Participants were asked to indicate their highest level of formal education. See question 14 in Appendix E.

Stressful work environment. The 10-item Swedish Demand-Control-Support Questionnaire (DCSQ) was used to assess participants' work environment. The social support component of the scale was removed, as only the demand/control characteristics were targeted for the purpose of the study. The DCSQ was derived from The Job Content Questionnaire (JCQ) (Karasek, 1985) and translated and tested by others (Sanne, Torp, Mykletun, & Dahl, 2005). The questions were answered on a four-point scale from one (never/almost never) to four (frequently). The reliability measure was calculated among Norwegian adults. Internal consistency (Cronbach's α) for the translated version of the demand subscale was 0.73 and 0.74 for the control subscale (Sanne, Torp et al., 2005). Participants were to answer these sets of questions if they worked full or part time, were temporarily away from their job, or keeping house. See question 25 in Appendix E.

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[4] If participants reported living alone, personal income was used to calculate poverty level. If participants reported living with more than one other person, household income was used.

Due to the small sample size, missing values were recoded to prevent loss of participants in the one instance where the control subscale was carried forward to the model building analyses among males, predicting lifetime number of sexual partners. Due to a large amount of missing values, multiple imputation for missing data (Schafer, 1997) was utilized via SAS (Yuan, 2000) for all block and final model building among males, as the control subscale was significant at the bivariate level only among males.

Limited health access. Health access was assessed by asking participants if they had a medical or family doctor, and if they ever felt they needed health care but did not receive it in the past year. These questions were obtained from the East African Health Study survey (Calzavara et al., 2005). See questions 43-44 in Appendix E.

5.3.1.6 Sexual division of power

Condom-use skills. Participants were asked six questions assessing condom-use skills when using a condom, if they were to use one. They were asked if they should check the expiry date, if they should inflate the condom, if there should be any sexual penetration before the condom is on, if they should carefully roll the condom down, if they should use water-based lubrication on the condom, and if they should hold the bottom of the condom on the base of the penis when withdrawing. The scale was developed by the author and internal consistency for this scale is reported in the results section (see section 6.2.5.1). See question 37 in Appendix E.

Self-efficacy to avoid HIV. Six questions (O'Leary et al., 1992) were used to assess self-efficacy to practice safer sex. The questions were answered on a four-point scale (the original scale was flipped i.e., 1 = very hard was flipped to 1 = very easy, etc.) from one (very easy) to four (very hard). The scale was flipped during the development of the survey, so that the numerical values attached to the labels made logical sense to the participants and during analysis interpretation.

The reliability measure was calculated among New Jersey university students. Internal consistency (Cronbach's α) for this scale was 0.71 (O'Leary et al., 1992). See question 38 in Appendix E.

Assertive communication skills. Five questions—that were thought to be most relevant to the construct—derived from the 29-item Communication Skills Questionnaire (CSQ) (Takahashi, Tanaka, & Miyaoka, 2006) were used to assess participants' assertive and cooperative communication skills. They were asked how often they are able to say 'no' to people's requests when they want to, how often they are able to say 'no' to their partner's requests when they want to, how often they are able to start a conversation, how often they are able to discuss a topic even if others have the opposite opinion, and how often they are able to discuss a topic with their partner even if she/he has the opposite opinion. The questions were answered on a four-point scale (the original scale was flipped i.e., 1 = always was flipped to 1 = never, etc.) from one (never) to four (always). The scale was flipped during the development of the survey, so that the numerical values attached to the labels made logical sense to the participants and during analysis interpretation. Reliability measures for the full scale were calculated among Japanese medical students, mental disorder patients, patients' family members, and medical staff. The internal consistency (Cronbach's α) was 0.91-0.97, test-retest reliability (ANOVA-ICC) conducted on the students/patients, families, and staff were 0.88, 0.91, and 0.98, respectively (Takahashi et al., 2006). See question 50 in Appendix E.

Alcohol and drug abuse. Participants were asked if they have ever smoked cigarettes on a daily basis and for how long, if they currently smoked cigarettes, the frequency of alcohol drinking in the past year, the frequency of having five or more alcoholic drinks on one occasion in the past year, if they have ever tried or used illegal drugs, if they have ever used illegal drugs on a weekly

basis, and if they have ever injected non-prescribed drugs. These questions are used in the regularly conducted national substance use survey, The Canadian Addiction Survey (CCSA, 2004). See questions 51-58 in Appendix E.

Missing values were recoded to prevent loss of participants in the regression analyses. Due to the low number of missing data, multiple imputation (Schafer, 1997) was not used. During the sexual division of power block regression predicting condom-use risk, one missing observation for the variable 'have you ever smoked cigarettes on a daily basis' was recoded into the existing 'no' response category. Recoding in this manner was the most conservative route, because the 'no' response category contained the majority of responses and kept the results practically the same. In addition, during the sexual division of power block regression predicting lifetime number of sexual partners, a value of 0 was entered for the 34 expected missing observations within the variable 'for how long did you smoke cigarettes on a daily basis, in months'. Those that were expected to skip this question had never smoked on a daily basis, thus their smoking duration would have been 0 months.

Perceived control over condom use. Three questions were used to assess participants' perceived control over condom use. These questions were derived from a conference presentation given at Yale University (Devos-Comby, McCarthy, Ferris, & Salovey, 2002). See questions 39-41 in Appendix E.

Abuse. See questions 74-82 in Appendix E. Four questions were used to assess past verbal, psychological, and physical abuse from participants' current partners (Beadnell et al., 2000). Child sexual abuse was assessed by asking if the participant had ever been forced to have sex. If the participant answered 'yes', they were to indicate if this event occurred when they were younger than 15 years old. Fear of abuse was assessed by asking the participant if they were

afraid of being physically abused by their current partner. A history of abuse was assessed by asking the participant if they have ever been physically, sexually, or verbally abused by a previous partner. The last question of the survey asked participants to share any comments or suggestions regarding the survey, if they wished. This question was created by the author in order to avoid ending the survey on the topic of abuse. Twenty-one participants shared comments, most related to the survey and interest in seeing the results. See questions 74-82 in Appendix E.

Missing values were recoded to prevent loss of participants in the regression analyses. Due to the low number of missing data, multiple imputation (Schafer, 1997) was not used. During the sexual division of power block regression predicting condom-use risk and the block regression predicting lifetime number of sexual partners, one missing observation for the variable 'have you ever been afraid of being abused by your current partner' was recoded into the existing 'never' response category. In addition, during the sexual division of power block regression predicting condom-use frequency, one missing observation for the variable 'have you been abused by a previous partner' was recoded into the existing 'never' response category. Recoding in this manner was the most conservative route, because the 'never' response categories contained the majority of responses and kept the results practically the same.

A high-risk sexual partner. Participants were asked, to the best of their knowledge, if their current sexual partner had ever paid for sex, had currently or previously had concurrent sexual partners, had previously injected non-prescribed drugs, if their partner is HIV positive, and the partner's number of previous sexual partners. These questions were created by the author. Limitations existed among these questions, as participants had to answer to the best of their knowledge, thus responses were not necessarily objective. See questions 64-65 in Appendix E.

A partner who disapproves of practicing safer sex. Participants were asked if their partners would resist using condoms if requested. The question was developed by the author. See question 65f in Appendix E.

Exposure to sexually explicit media. Participants were asked how many movies or shows they had watched in the past three months that were x-rated. The question was derived from a study conducted by Wingood and colleagues (2001). See question 73 in Appendix E.

Access to school-based HIV prevention education. Participants were asked if they ever discussed HIV prevention or safer-sex practices within a school class that they attended. The question was developed by the author. See question 63 in Appendix E.

5.3.1.7 The structure of cathexis

Family influence regarding HIV prevention. Participants were asked who they lived with the most while growing up, the highest level of education attained by each parent, and whether they ever discussed marriage, contraception, HIV prevention, and premarital sex with the person they lived with and raised them while growing up. These questions were developed by the author and the author's supervisor, Dr. Sandra L. Bullock. See questions 10, 12-13, and 59-62 in Appendix E.

Missing values were recoded to prevent loss of participants in the regression analyses. Due to the low number of missing data, multiple imputation (Schafer, 1997) was not used. During the structure of cathexis block regression predicting lifetime number of sexual partners, two missing observations for the variables 'have you discussed HIV prevention with your family while growing up' and 'have you discussed premarital sex with your family while growing up' were recoded into the existing 'no' response categories Recoding in this manner was the most

conservative route, because the 'no' response categories contained the majority of responses and kept the results practically the same.

Mistrust of the medical system. The 10-item Health Care System Distrust Scale (Rose, Peters, Shea, & Armstrong, 2004) was used to assess distrust levels towards the health care system. The questions were answered on a five-point scale from one (strongly disagree) to five (strongly agree), however, option three (not sure) was changed to 'neither agree nor disagree', in order to keep this category consistent across all scales in the survey. The reliability measure was calculated among African-American and White participants awaiting jury duty selection from a Philadelphia court. The internal consistency (Cronbach's α) for this scale was 0.75 (Rose et al., 2004). See question 45 in Appendix E.

Conservative gender and cultural norms and traditional beliefs. The 8-item Power and Attitudes in Relationships (PAIR) scale (Sherman et al., 2000) was used to assess participants' attitudes towards the power balance between genders in a relationship. The questions were answered on a five-point scale (the original scale was flipped i.e., 1 = strongly agree was flipped to 1 = strongly disagree, etc.) from one (strongly disagree) to five (strongly agree). The scale was flipped during the development of the survey, so that the numerical values attached to the labels made logical sense to the participants and during analysis interpretation. In addition, option three (neither agree nor disagree) was added by the author in order to keep this category consistent across all scales in the survey. The reliability measure was calculated among low-income African-American women. Internal consistency (Cronbach's α) for the scale was 0.79 (Sherman et al., 2000).

The 10-item Double Standard Scale (Caron et al., 1993) was used to assess attitudes towards the traditional gendered double standard. However, item five was split into two

questions by the author, as this question measured two different opinions, increasing the scale to 11 items. The questions were answered on a five-point scale (the original scale was flipped i.e., 1 = strongly agree was flipped to 1 = strongly disagree, etc.) from one (strongly disagree) to five (strongly agree). The scale was flipped during the development of the survey, so that the numerical values attached to the labels made logical sense to the participants and during analysis interpretation. In addition, option three (undecided) was changed to 'neither agree nor disagree' in order to keep this category consistent across all scales in the survey. The reliability measure was calculated among Maine university students. Internal consistency (Cronbach's α) for the scale was 0.72 (Caron et al., 1993).

Lastly, the 10-item Scale of Traditional Attitudes Toward Marriage and the Family (Hojat et al., 2000) was used to assess attitudes regarding marriage and family which may be affected by cultural norms. However, item eight was split into two questions by the author, as this question measured two different opinions, increasing the scale to 11 items. The questions were answered on a five-point scale (the original scale was flipped i.e., 1 = strongly agree was flipped to 1 = strongly disagree, etc.) from one (strongly disagree) to five (strongly agree). The scale was flipped during the development of the survey, so that the numerical values attached to the labels made logical sense to the participants and during analysis interpretation. The reliability measure was calculated among Iranian and British students. Internal consistency (Kuder-Richardson reliability estimate, Formula 20) for this scale was 0.74, and test-retest reliability (3-week span) was 0.70 (Hojat et al., 2000). See questions 33-35 in Appendix E.

A partner who is older. Participants were asked their partner's age. In order to calculate the age difference between participants and their partners, the partner's age was subtracted from the participant's age. See question 19 in Appendix E.

Desire to get pregnant. Participants were asked if they or their partner had a desire to get pregnant in the next 12 months. The question was developed by the author. See questions 72 in Appendix E.

Religious affiliation. Participants were asked their religious preference, the frequency with which they attended religious services, and the importance of religion and spirituality in their lives. These questions were derived from a study's interview questionnaire—About Last Night: Dates, Drinks and Sex (Bullock, 2001). See questions 28-31 in Appendix E.

Knowledge of HIV prevention. The 12-item HIV Risk Knowledge Test was adapted from a previous study (Sikkema et al., 1996), making minor changes to the wording of the 11th item. The 11th item was originally targeted for a female sample, thus the word 'man' was changed to 'someone' to make the question appropriate for both males and females. In addition, the word 'AIDS' throughout the scale was replaced with 'HIV', as directed by the ethics committee, in order to make all questions consistent throughout the survey. The scale assessed HIV-related knowledge. Participants responded to each statement with either 'true' or 'false'. The reliability measure was originally calculated among low-income American women. Internal consistency (Cronbach's α) for the scale was 0.74 (Sikkema et al., 1996). See question 42 in Appendix E.

During the structure of cathexis block regression predicting lifetime number of sexual partners, one participant who missed questions within the HIV Risk Knowledge Test was retained because this kept the results practically the same.

Negative beliefs not supportive of safer sex. The 8-item shortened Attitudes Towards Condoms scale (Delaney et al., 1997) was used to assess attitudes towards the use of condoms. These questions were derived by Delaney and colleagues (1997) from the original 40-item Attitudes Towards Condoms scale (Brown, 1984). Questions were answered on a five-point scale from

one (strongly disagree) to five (strongly agree). The reliability measure was calculated among high school students in Nova Scotia. Internal consistency (Cronbach's α) for the shortened scale was 0.82 (Delaney et al., 1997). See question 36 in Appendix E.

Invulnerability to HIV/AIDS. Three questions were used to assess participants' perceived risk to HIV/AIDS (Loue, Cooper, Traore, & Fiedler, 2004). Questions are answered on a four-point scale, with higher scores indicating high perceived risk. The reliability measure was calculated among Hispanic women. Internal reliability (Cronbach's α) for this scale was 0.86 (Loue et al., 2004). See questions 69-71 in Appendix E.

Missing values were recoded to prevent loss of participants in the regression analyses. Due to the low number of missing data, multiple imputation (Schafer, 1997) was not used. During the structure of cathexis block regression predicting lifetime number of sexual partners, one missing observation for the variable 'how worried are you about getting HIV' was recoded into the existing 'not worried at all' response category. Recoding in this manner was the most conservative route, because the 'not worried at all' response category contained the majority of responses and kept the results practically the same.

Depression or psychological distress. Depression was assessed using two questions previously tested for sensitivity (96% sensitive) and specificity (specificity of 57%) in picking up depression (Whooley, Avins, Miranda, & Browner, 1997). Participants were also asked if they have ever been diagnosed with or treated for depression or a psychological disorder. See questions 46-49 in Appendix E.

Missing values were recoded to prevent loss of participants in the regression analyses. Due to the low number of missing data, multiple imputation (Schafer, 1997) was not used. During the structure of cathexis block regression predicting condom-use risk, one missing

observation for the variable 'during the last month, have you been bothered by little interest or pleasure in doing things' was recoded into the existing 'no' response category. Recoding in this manner was the most conservative route, because the 'no' response category contained the majority of responses and kept the results practically the same.

5.3.2 Data management

Data was collected via the online survey software, php Easy Survey Package (phpESP), version 1.8.2 (phpESP, 2006). Multiple questions per screen were used in completion of the survey. Use of multiple items per screen has been reported to increase the perception of speed in completing online questionnaires (Mangunkusumo et al., 2005). The database was temporarily stored on the University of Waterloo server, strobe.uwaterloo.ca, which is located on the university campus behind locked doors (N. Patterson, personal communication, November 28, 2006). The data encryption was high-grade AES 256-bit encryption and a firewall runs on the server (N. Patterson, personal communication, November 28, 2006). In addition, the survey link began with https. This is associated with standards that force all information leaving the participant's computer to be encrypted (N. Patterson, personal communication, November 28, 2006). The author subsequently downloaded the stored data into an EXCEL file every three days. All open-ended questions, such as country of origin, were numerically coded prior to analysis. Once data collection ended, the author contacted the survey software's administrator to remove the survey from the server, which automatically removed the data as well (N. Patterson, personal communication, November 28, 2006). All data stored on the author's computer are password-protected and will be stored for seven years. A back-up of the data is stored on a Universal Serial Bus (USB) memory stick, which is kept in a locked filing cabinet when not in use.

5.3.3 Data analysis

All analyses were conducted using the Statistical Analysis Software (SAS), version 9.1.3 (SAS Institute, 2006). All p-values were set at a significance level of .05, unless stated otherwise.

5.3.3.1 Univariate analyses

Ranges of scores were examined for all numerical open-ended questions, in order to identify potential outliers (Katz, 1999). Univariate analyses were used to explore characteristics (e.g., mean, distribution) of all independent (gender- and culturally-based risk factors) and dependent variables (sexual HIV-risk behaviour). Several demographic characteristics were compared with the 2001 Canadian Census (StatisticsCanada, 2001) as a frame of reference, using proportion comparisons (Fleiss, 1981). Gender differences were also examined among these variables. In addition, chi-square analyses were used to compare demographic characteristics (e.g., country of origin, year landed in Canada) between men and women. Lastly, internal reliability was calculated for several scales, including those developed by the author, and item response rates were calculated for all variables.

5.3.3.2 Bivariate analyses

Bivariate analyses were conducted to explore the associations between independent and dependent variables, as well as to aid in collapsing variables. T-tests and Analysis of Variance (ANOVAs) were used, as the dependent variables were treated as continuous variables (Cone & Foster, 2006). Bivariate analyses were stratified by gender to examine if variables were associated with HIV risk differently for men and women.

Multicollinearity. Following bivariate analyses, significant variables carried forward for model building were assessed for multicollinearity. Pearson's correlation coefficient matrices were used to assess the association strength between all significant variables (Katz, 1999). Variables correlated at more than 0.8 and above were to be flagged for further examination; however, all examined variables were only weakly to moderately correlated (Katz, 1999).

5.3.3.3 Multivariate analyses

Poisson regression analysis was used to predict lifetime number of sexual partners—due to the fact that the dependent variable was count data that was not normally distributed (most responses clustered around 0-4 partners) (Stokes, Davis, & Koch, 1991). Linear regression analysis was used to predict the continuous dependent variable, frequency of condom use, as the dependent variable was normally distributed (Katz, 1999). Variables were analyzed by blocks based on the three theory sections (the sexual division of labour, the sexual division of power, and the structure of cathexis). Block modeling was used due to the low sample size, retaining only significant variables to be carried forward to the final model, in order to reduce the number of variables within the final model. The blocks were based upon the three theory sections because it was thought to make the most theoretical sense.

Variables significantly associated with the dependent variable at an α-level of 0.25 at the bivariate level were all entered into a block regression model (Bendel & Afifi, 1977; Mickey & Greenland, 1989). Subsequently, backwards selection removed any variable that did not remain at $p \leq 0.25$. Age, personal income, and education level were carried through to the final model, regardless of their significance level. Variables that remained significant at $p \leq 0.25$ within each block were carried forward to comprise the full model. Within the final model, backwards selection removed any variable that did not remain at $p \leq 0.1$, due to the small sample size (Katz,

1999). Regression analyses were stratified by gender to examine if different variables predicted

the response for men and women.

Treatment of variables. Income was treated as a continuous variable within the regression

models. In addition, education was treated as a continuous variable only within the regression

models predicting lifetime number of sexual partners[5].

Regression diagnostics. Residuals and outliers were identified within the linear regression

models by examining the final models' residuals plotted against the predicted values of the

dependent variable. However, no outliers were identified in the final models. Regarding the

final Poisson regression models, due to overdispersion among the 'lifetime number of sexual

partners' variable's distribution, a scaling factor was used to adjust for the large variance, using

the Pearson scale (Stokes et al., 1991).

Power analyses. Power analyses were conducted among several variables that were significant

at the .1 significance level within the bivariate analyses, but were non-significant within the

regression analyses. These analyses helped to clarify the reason as to why a variable dropped

from the regression analyses (i.e., as a result of low power/small sample size). Power analyses

were only conducted among independent variables within the 'condom-use frequency' models,

to offer a quick glance at possible explanations for dropped variables. Analyses were conducted

using the Power and Sample Size (PS) software (PS, 2004).

5.3.3.4 Exploratory data analyses

Exploratory analyses were conducted using the acculturation variable. The acculturation

variable was entered in the final regression models to determine whether it explained any of the

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[5] Education was treated as categorical (its original format) only within the regression models predicting condom-use risk because it was found to be significantly associated with the dependent variable, thus maintaining its original format.

remaining variance in the models once the TGP variables had all been considered, regardless of its significance at the bivariate level.

5.3.4 Resources

Resources required for the study were minimal, considering the data collection was web-based. Costs associated with the study were comprised of the mileage costs to and from the community advisory committee meetings, SAS licenses, and incentive gift certificates. In addition, the budget included funds to advertise the study in a newspaper (Arab 2000) and a Middle Eastern online community (http://www.arabtoronto.com/). The study was supported by the University of Waterloo/Social Science and Humanities Research Council (UW/SSHRC) institutional grant.

5.4 Ethics

5.4.1 Confidentiality/anonymity

All participation was voluntary, confidential, and responses were anonymous. Informed consent was obtained at the start of the survey. Participants were required to read an informational letter and indicate their consent to participate at the end by clicking on 'I agree'. Participants were not able to continue with the survey unless they clicked on 'I agree'. Refer to Appendix F for the consent form. In addition, participants were able to leave questions blank or withdraw from the study without submitting their responses at any time during the survey, without penalty. The University of Waterloo's Office of Research Ethics granted full ethics clearance for the current study on February 16, 2007.

5.4.2 Community advisory committee

A community advisory committee was created in order to receive relevant cultural feedback regarding the study from members of the Middle Eastern community. The board consisted of three members (one female, two males), one of which was the creator and facilitator of one of the Middle Eastern online communities (http://www.redwhitegreen.com/). All three were members of the Middle Eastern community, circulated in the community and among other Middle Easterners almost exclusively, and frequented several different organized Middle Eastern social events. The members volunteered to be part of the community advisory board, as they felt that the current study was important for the Middle Eastern community. Two of the members were at arm's length to the author, while the other was a friend.

A letter of support for the proposed study from two members was received on behalf of the community advisory committee. Please refer to Appendix G for the letter of support. Six meetings were held and the committee gave input into and their approval to the initial survey questions. Final results following all analyses will be reviewed by the committee members in the summer of 2007, after the current thesis has been completed and defended. In the event that two or more committee members disapprove of results, recommendations regarding how and what results to present online in the summer of 2007 will be acquired by the members.

5.4.3 Risks and benefits to participants

5.4.3.1 Direct benefits

Direct benefits to participants originally included a 1 in 15 chance of winning a $25 online gift certificate to Amazon.ca, if they chose to enter the draw. However, due to the low number of participants that entered the draw, all thirteen participants received a gift certificate.

In addition, in completing the survey, participants were able to take part in an important research study relevant to their ethnic group. Participants will also be able to obtain feedback regarding results of the study via the Middle Eastern online community website (http://www.redwhitegreen.com/), following the thesis defense.

5.4.3.2 Indirect benefits

Indirect benefits to participants included information gained about HIV-risk factors in the Middle Eastern community and getting people talking about issues that they may not have thought of or may not have been able to bring up in discussion. The study's survey allowed such an opportunity.

5.4.3.3 Direct risks

With regard to possible direct risks, respondents may have felt uncomfortable answering questions of sensitive nature, such as sexual behaviour and drug use. However, web links and telephone numbers to resources such as drug abuse treatment centers, abuse shelters, and mental health centers were provided at the end of the survey. Refer to Appendix H for the thank you letter and the resource list.

A link to the Canadian Centre on Substance Abuse was made available, whereby it immediately directed participants to a directory search, where they could have located treatment services in their cities. A telephone number to the Drug and Alcohol Registry of treatment was also made available to those that needed immediate assistance and/or treatment information regarding drug and/or alcohol abuse.

A link to the Canadian Mental Health Association was also made available, which directed participants to a directory search, where they could have located treatment facilities in

their provinces. A telephone number to Mental Health Service Information Ontario was also made available to those who were looking for mental health information, programs, or services.

A link to the Public Health Agency of Canada was made available, where it directed them to various links that offered available contact information for abuse victims in Canada. A telephone number to the National Clearinghouse on Family Violence was also made available for information and resources on family violence.

In addition, participants may have realized that they needed more information regarding HIV/AIDS. A link to Health Canada's HIV and AIDS web page was made available, offering information and related links. A telephone number to the Canadian AIDS Treatment Information Exchange was also made available for those looking for HIV treatment information, HIV resources such as testing clinics, or support.

5.4.3.4 Indirect risks

Indirect risks may have included participants becoming worried about getting HIV or feeling invulnerable to HIV and having sex without a condom. However, the links made available in the resource list (Appendix H) provided participants with useful information regarding HIV/AIDS.

5.4.4 Remuneration

Participants had the option of entering a draw for a $25 gift certificate to Amazon.ca. They entered the draw by sending their contact information to the study's email address, which was attached to the thank you letter at the end of the survey. It was reiterated that their confidentiality will be maintained i.e., their email address cannot be linked to their survey data. The author copied all email addresses entered into the draw onto pieces of paper, in order to

divide them into groups of 15. However, as previously discussed, a total of thirteen participants

entered the draw, and due to the low number of entries, all thirteen participants were contacted

and were sent their electronic gift certificates via email. They were also reminded about where

and when to access a summary of the results. All participant email addresses were then

permanently deleted from the study's email inbox and the pieces of paper containing email

addresses were shredded and discarded.

5.4.5 Dissemination of knowledge

The study's results will be posted on the Red White Green community's website. The

final page of the survey (thank you letter) advised participants to check this website in the

summer of 2007 (after the thesis defense) if they were interested in the results. The author's

contact information will be made available if participants have further questions.

6. RESULTS

6.1 Survey Submission and Response

Surveys were administered online and a total of 181 participants submitted the survey. A total of ten participants who submitted the survey were excluded from the analyses since they were not eligible, resulting in a total sample size of 171. Of the non-eligible participants, two were not of Middle Eastern and/or Arab descent, four were not dating or in a relationship, and four identified themselves other than heterosexual.

Following the removal of non-eligible participants, there were a total of thirteen non-completers which were also deleted, resulting in a total sample size of 158. The non-completers stopped the survey during the demographics section, soon after, or before the dependent variables. Non-completers were compared to completers on several demographic variables in order to identify differences between them. There were no differences between the two with regard to gender ($p = 0.355$), family's country of origin ($p = 0.586$), immigration status ($p = 0.991$), education ($p = 0.544$), relationship status ($p = 0.184$), or age ($p = 0.19$). However, non-completers were marginally more likely to have been recruited into the study through a Middle Eastern organization/club or a newspaper advertisement compared to completers (via club: 33.33% vs. 10.76%, via newspaper: 8.33% vs. 0.63%, respectively; $\chi^2 (8) = 14.84$, $p = 0.062$). In addition, non-completers were more likely to be widowed, compared to completers (11.11% vs. 0%, respectively; $\chi^2 (3) = 17.51$, $p = 0.0006$) and more likely to have a job but be temporarily away because of an illness (12.5% vs. 0%, respectively; $\chi^2 (16) = 26.11$, $p = 0.053$, cell $\chi^2 = 18.8$). In addition, one male participant was removed from the final sample due to his extreme answers on almost all the questions in the survey.

6.1.1 Final sample

The remaining sample (n = 157) was recruited into the study through various means (see Table 2); however, the two most common sources were through the Facebook website (43.95%) and through word of mouth from a friend or family member (26.75%). No gender differences were found in how participants were recruited into the survey (p = 0.966).

Table 2. Source of Survey

Source	N (%)
Facebook	69 (43.95)
Friend/family (word of mouth)	42 (26.75)
RedWhiteGreen website	17 (10.83)
Middle Eastern/Arab organization/club	17 (10.83)
Poster in a Middle Eastern/Arab organization	5 (3.18)
Newspaper	1 (0.64)
Religious group	1 (0.64)
ArabToronto website	1 (0.64)
Unspecified source	4 (2.55)
Total	**157 (100)**

6.1.1.1 Item response rates

Demographics, sexual behaviour, & acculturation. Response rates on individual questions were relatively high (see Table 3). Nine out of the 11 demographic variables had a response rate over 99%, while 'place of residence' and 'relationship length' each had a response rate of 98.73% (see Table 4 for poor response rates). All questions of the Marlowe-Crowne 2 Social Desirability Scale (M-C 2) had a response rate above 98%, and one participant missed answering more than two of the scale questions, thus was considered a non-respondent on the scale. Lifetime number of sexual partners and condom-use frequency both had a response rate of 100%. Finally, all questions of the acculturation scale had a response rate above 98%, leaving all 157 final scores in the analyses.

Table 3. Item Response Rates

Demographic Variables	99.48%
Marlowe-Crowne 2 Social Desirability Scale (M-C 2)	99.17%
Sexual Behaviour Variables	
Number of lifetime sexual partners	100%
Frequency of condom use	100%
Acculturation Scale	99.47%
Sexual Division of Labour Variables	99.04%
Swedish Demand-Control-Support Questionnaire (DCSQ)	95.54%
Sexual Division of Power Variables	99.32%
Condom Use Skills Scale	99.90%
Self-Efficacy to Practice Safer Sex	98.41%
Assertive Communication Scale	98.86%
The Structure of Cathexis Variables	99.14%
Power and Attitudes in Relationships (PAIR)scale	99.12%
Double Standard Scale	99.19%
Traditional Attitudes Towards Marriage and the Family Scale	99.07%
Attitude Towards Condoms Scale	98.96%
HIV Risk Knowledge Test	98.35%
Health Care System Distrust Scale	97.51%

Sexual division of labour. Ten out of the 12 sexual division of labour variables had a response rate over 98%. Household income had the lowest response rate of 95.54%[6], while personal income had a response rate of 97.45%. Nine out of the ten questions from the DCSQ scale had a response rate above 95%, while 'do you have sufficient time for all your work tasks' had a response rate of 94.9%. Nine participants missed answering more than two questions on the DCSQ, thus were considered non-respondents on the scale.

Sexual division of power. Twenty-six of the 28 sexual division of power variables had a response rate over 98%, while 'how many sexual partners has your current partner ever had' had a response rate of 96.82%[7] and 'number of x-rated movies/shows watched in the past 3 months' had a response rate of 97.45%. Five of the six questions in the condom-use skills scale had a response rate of 100%, leaving all 157 scores in the analyses, while 'should you carefully roll the condom down on the penis' had a response rate of 99.36%.

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[6] This percentage includes those that responded with 'don't know'.

[7] The remaining 3.16% left this question blank.

Four of the six questions in the self-efficacy to practice safer sex scale had a response rate over 98%, while 'how hard would it be for you to refuse to have sex with a person if they won't use a condom' and 'how hard would it be for you to stop sexual activity while you or your partner goes to get a condom' both had a response rate of 97.45%. Three participants missed answering more than one question on the self-efficacy to practice safer sex scale, thus were considered non-respondents on the scale. All questions in the assertive and cooperative communication scale had a response rate above 98%, while two participants missed answering more than one question on the assertive and cooperative communication scale, thus were considered non-respondents on the scale.

Structure of cathexis. Nineteen of the 20 structure of cathexis variables had a response rate above 98%, while 'discussing contraception with the people who raised you while growing up' had a response rate of 97.45%. All questions in the PAIR scale had a response rate above 98%, while one participant missed answering more than two questions on the PAIR scale, thus was considered a non-respondent on the scale. All questions in the Double Standard Scale, the Traditional Attitudes towards Marriage and the Family Scale, and the Attitudes Towards Condoms Scale had a response rate above 98%, while one participant missed answering more than two questions on each scale, thus were considered non-respondents.

Ten of the 12 HIV Risk Knowledge Test questions had a response rate above 98%, while 'latex is the best material a condom can be made of for protection against HIV' and 'hand lotion is not a good lubricant to use with a condom' each had a response rate of 97.45%. Three participants missed answering more than two questions on the HIV Risk Knowledge Test, thus were considered non-respondents on this scale. Finally, eight out of the ten questions in the Health Care System Distrust Scale had a response rate above 97%, while 'when they take my

blood, they do tests they don't tell me about' and 'some medicines have things in them that they

don't tell you about' each had a response rate of 96.82%. Four participants missed answering

more than two questions on the Health Care System Distrust Scale, thus were considered non-

respondents on this scale.

Table 4. Poor Item Response Rates in Comparison to Others in the Same Category

Demographic Variables	
Place of residence	98.73%
Relationship length	98.73%
Sexual Division of Labour Variables	
Personal income	97.45%
Household income	95.54%
Swedish Demand-Control-Support Questionnaire (DCSQ)	
Do you have sufficient time for all your work tasks?	94.90%
Sexual Division of Power Variables	
How many sexual partners has your current partner ever had?	96.82%
Number of x-rated movies/shows watched in the past 3 months	97.45%
Condom Use Skills Scale	
Should you carefully roll the condom on the penis?	99.36%
Self-Efficacy to Practice Safer Sex	
How hard would it be for you to refuse to have sex with a person if they won't use a condom?	97.45%
How hard would it be for you to stop sexual activity while you or your partner goes to get a condom?	97.45%
The Structure of Cathexis Variables	
Discussing contraception with the people who raised you while growing up	97.45%
HIV Risk Knowledge Test	
Latex is the best material a condom can be made of for protection against HIV	97.45%
Hand lotion is not a good lubricant to use with a condom	97.45%
Health Care System Distrust Scale	
When they take my blood they do tests they don't tell me about	96.82%
Some medicines have things in them that they don't tell you about	96.82%

6.2 Description of Study Sample

6.2.1 Demographic characteristics

The sample had significantly more females than males (65.38% vs. 34.62%, respectively;

$\chi^2 (1) = 14.77$, p = 0.0001). Using the 2001 Canadian Census as a frame of reference, this

study's sample had a significantly ($\chi^2 (1) = 24.65$, p < 0.0001) higher percentage of females than

did the Canadian Arab population (45.58% female) (StatisticsCanada, 2002a). The mean age of the sample was 22.71 years (SD = 3.82, range = 18 to 35) and males were older than females (23.72 vs. 22.16, respectively; t (80.9) = -2.21, p = 0.03).

There was a wide range of reported family's country of origin and birthplace (see Table 5). Thirty percent of participants reported a Lebanese background, while others reported origins from Iraq, Iran, Egypt, Palestine, Syria, with only one to four coming from each of Afghanistan, Turkey, Canada, Yemen, Israel, Algeria, Tunisia, Saudi Arabia, Jordan, mixed Arab countries, mixed Arab and European/North American countries, mixed Arab and South Asian countries, and mixed Arab and West Indian countries. In addition, 32.05% reported Canada as their birthplace, while others reported being born in Iraq, Iran, Lebanon, Egypt, Palestine, Syria, Afghanistan, Turkey, Israel, Algeria, Tunisia, Saudi Arabia, Jordan, UK/England, USA, UAE/Dubai, Kuwait, Romania, Belgium, Philippines, Sudan, Libya, Germany, and Grenada. No gender differences were found for country of origin (p = 0.4) or birthplace (p = 0.254).

Table 5. Top Five Countries of Origin

	N[a] (%)
Origin	
Lebanon	47 (29.94)
Iraq	20 (12.74)
Iran	13 (8.28)
Egypt	12 (7.64)
Palestine	12 (7.64)
Mixed Middle Eastern/Arab	20 (12.74)
Other	33 (21.02)
Total	**157 (100)**
Birthplace	
Canada	50 (32.05)
Lebanon	21 (13.46)
Iraq	11 (7.05)
Syria	9 (5.77)
UAE/Dubai	9 (5.77)
Other	56 (35.90)
Total	**156 (100)**

[a] Sample sizes vary due to missing values

If participants were born outside of Canada, the mean age of first coming to Canada to live was 11.67 years (SD = 6.79, range = 0.66 to 33), with males moving to Canada at an older age than females (13.78 vs. 10.52, respectively; t (103) = -2.45, p = 0.016). For those born out of Canada, 82.08% were Canadian citizens, while the others reported being landed/permanent residents, a refugee/protected person, a visitor, or in Canada on a student visa. No gender difference was found with regard to immigration status (p = 0.191). As an eligibility requirement, all participants were living in Canada at the time of the survey. Within Canada, 63.87% reported residing in Toronto/GTA, 12.9% in Ottawa, and 11.61% in Montreal, with the remaining 11.62% residing in Vancouver, Waterloo, Halifax, Windsor, Calgary, Hamilton, London, St. Catherine's, Guelph, Edmonton, or an unspecified city. No gender difference was found with regard to place of residence (p = 0.161).

Half of participants (50%) reported being committed to their partners, while the others reported being exclusive—with none (16.03%) or some (17.95%) commitment—, non-exclusive (5.13%), or casual (10.9%). Most participants reported their marital status as being single (74.19%), while 15.48% reported being engaged, and 10.32% reported being married/common law. One participant indicated being engaged and non-exclusive, while another reported being married and exclusive with only some commitment. Twenty-five percent of engaged participants also reported being exclusive, but with only some commitment. No gender differences were found for relationship status (p = 0.526) or marital status (p = 0.124). This sample had a significantly (χ^2 (1) = 117.02, p < 0.0001) higher percentage of single participants, compared to the 2001 Census, reporting 33.23% of Arabs as single[8] (StatisticsCanada, 2002b). The mean duration of relationships was 22.76 months (SD = 39.29, range = 0.75 to 300), with no

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[8] However, the 2001 Census reports marital status for those aged 15 years and over, thus including a wider age range than the current study.

gender difference (p = 0.866). Partners' origin varied widely (see Table 6); however, 19.11% of

participants reported that their partners were of Lebanese origin, while others reported their

partners' country of origin as Iraq, Iran, Egypt, Palestine, Syria, Afghanistan, Turkey, Canada,

Israel, Saudi Arabia, Jordan, Scotland, Greece, Jamaica, Portugal, Bahrain, UK/England, France,

Italy, Ukraine, Chile, India, South Africa, USA, Bulgaria, Dominican Republic, Bangladesh,

Netherlands, China, Croatia, UAE/Dubai, and mixed ethnicities.

Table 6. Top Five Countries of Origin for Partners

Country of Origin	N (%)
Lebanon	30 (19.11)
Iran	13 (8.28)
Canada	11 (7.01)
Egypt	10 (6.37)
Iraq	9 (5.73)
Other	84 (53.50)
Total	**157 (100)**

Social Desirability Scale scores were compared between males and females, showing no

significant difference (p = 0.708). The mean score for the sample was 5.99 (SD = 2.07, median

= 6, possible score range 0 to 10, actual score range 1 to 10; 10 indicating socially desirable

answers). Past research has reported slightly lower social desirability scores, using the Marlowe-

Crowne Social Desirability Scale Version 1 (M-C 1)[9] or M-C 2. For example, medical students

following a problem-based learning curriculum scored a mean of 4.41 (CI = 3.66 – 5.16), while

medical students following a traditional curriculum scored a mean of 4.79 (CI = 3.64 – 4.72)

(Crandall, Reboussin, Michielutte, Anthony, & Naughton, 2007). In addition, respondents with

high spider fear scored a mean of 3.4 (SD = 2), while respondents with low spider fear scored a

mean of 4.7 (SD = 1.6) (Mogg & Bradley, 2006). Lastly, among university students, the mean

score was reported as 4.6 (SD = 2.1) (Strahan & Gerbasi, 1972). Within the current study,

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[9] The M-C 1 and the M-C 2 have been reported as roughly parallel with regard to reliability, sample mean scores, and standard deviations (Strahan & Gerbasi, 1972).

internal consistency (Cronbach's α) for the M-C 2 was 0.57, indicating low reliability (Katz, 1999). However, past research has reported an internal consistency of 0.49 to 0.75 for this scale (Strahan & Gerbasi, 1972), and may thus reflect a measure of different constructs (Cone & Foster, 2006).

6.2.2 Sexual behaviour characteristics

Over the course of their lifetimes, participants (sexually and not sexually active) reported a mean of 4.31 sexual partners (SD = 10.56, range = 0 to 100), with males reporting more sexual partners than females (7.2 vs. 2.8, respectively; t (154) = -2.51, p = 0.013). Among those sexually active, participants reported a mean of 6.76 sexual partners (SD = 12.6, range = 1 to 100), with no gender difference (p = 0.191). However, 36.54% of participants reported no past sexual partners (see Table 7), and females were more likely to report no past sexual partners than were males (47.06% vs. 16.67%, respectively; χ² (1) = 14.06, p < 0.0001).

Table 7. Condom Use & Sexual Behaviour

	N[a] (%)
No Lifetime Sexual Partners	**57 (36.54)**
Condom Use During Last Intercourse	
No	37 (36.27)
For part of the time	16 (15.69)
Yes	49 (48.04)
Total	**102 (100)**
Condom Use Frequency	
Never	6 (5.88)
Rarely	15 (14.71)
Sometimes	15 (14.71)
Almost always	38 (37.25)
Every time	28 (27.45)
Total	**102 (100)**

[a] Sample sizes do not equal to 157 (full sample size), as these questions applied only to those that had at least one sexual partner in the past.

Forty-eight percent of sexually active participants reported using a condom the last time they had sex, while 27.45% reported always using condoms when having sex with partners.

There were no gender differences regarding using a condom the last time they had sex ($p = 0.456$) or regarding the frequency of condom use ($p = 0.242$). In addition, lifetime number of sexual partners among males or females was not associated with condom-use risk ($p = 0.792$, $p = 0.708$, respectively).

With respect to social desirability, neither lifetime number of sexual partners nor condom-use frequency when having sex were found to be correlated with social desirability ($p = 0.417$, $p = 0.669$, respectively). However, condom use the last time they had sex was significantly associated with social desirability, where participants who reported using a condom the last time had more socially desirable answers than did those who reported using a condom for part of the time (6.41 vs. 4.69, respectively; $F (2) = 4.26$, $p = 0.017$, Tukey's post hoc test $\alpha = 0.05$).

6.2.3 Acculturation

The mean acculturation score for this sample was 23.58 (SD = 8.16, median = 23, possible score range 0 to 48, actual score range 3 to 41.45; 48 indicating high acculturation from Middle Eastern culture), with no gender difference. Internal consistency (Cronbach's α) for the acculturation scale was 0.78, indicating good reliability (Katz, 1999).

6.2.4 Sexual division of labour characteristics

6.2.4.1 Living in poverty

Participants reported a mean household size of 3.89 persons (SD = 1.7, range = 1 to 10) and mean number of dependents under their care of 0.53 persons (SD = 1.07, range = 0 to 5). There was a marginally significant difference regarding household size, where females reported living in a larger household than males (4.06 vs. 3.56, respectively; $t (154) = 1.77$, $p = 0.079$). In

addition, there was a marginally significant difference regarding the number of dependents under one's care, where males reported more dependents than females (0.76 vs. 0.41, respectively; t (80.6) = -1.76, p = 0.082).

For those who were living with their parents (61.29%) or were being supported by them, parental income was relatively high; 21.17% indicated that their parents' income was greater or equal to $100,000 in 2006, whereas 30.66% did not know their parent's income (see Table 8). Half of the participants (50.96%) reported their main source of income coming from wages and salaries, 26.11% reported being financially supported by someone, while the remaining 22.93% reported an income from self employment, scholarships/student loans/bursaries, investments, or reported no legal income.

Table 8. Parental, Personal, & Household Income

Income	Parental N[a](%)	Personal N[a](%)	Household N[a](%)
No income	4 (2.92)	19 (12.42)	2 (1.33)
Less than $6,000	2 (1.46)	24 (15.69)	1 (0.67)
$6,000 to $11,999	2 (1.46)	33 (21.57)	2 (1.33)
$12,000 to $19,999	5 (3.65)	12 (7.84)	5 (3.33)
$20,000 to $29,999	11 (8.03)	13 (8.50)	4 (2.67)
$30,000 to $39,999	4 (2.92)	10 (6.54)	12 (8.00)
$40,000 to $49,999	4 (2.92)	12 (7.84)	
$50,000 to $59,999	8 (5.84)	9 (5.88)	15 (10.00)
$60,000 to $69,999	10 (7.30)	4 (2.61)	
$70,000 to $79,999	7 (5.11)	5 (3.27)	12 (8.00)
$80,000 to $89,999	5 (3.65)	3 (1.96)	
$90,000 to $99,999	4 (2.92)	5 (3.27)	8 (5.33)[b]
$100,000 or more	29 (21.17)	4 (2.61)	8 (5.33)[c]
$130,000 to $149,999	-	-	8 (5.33)
$150,000 or more	-	-	29 (19.33)
Don't know	42 (30.66)	-	44 (29.33)
Total	**137 (100)**	**153 (100)**	**150 (100)**

[a] Sample sizes vary due to missing values and skip patterns
[b] $90,000 to $109,999
[c] $110,000 to $129,999

Personal income was relatively low; 21.57% reported a salary of $6,000 to $11,999, 15.69% reported under $6,000, and 12.42% reported no income. Results regarding no income were similar (p = 0.618) to the 2001 Census results, which reported 11.15% of Arabs having no

income[10] (StatisticsCanada, 2002c). However, household income among the study participants was reportedly high; 19.33% reported a household income of $150,000 or more, while 29.33% did not know their household income.

Overall, 56.05% of participants were living over the poverty line defined by Statistics Canada (StatisticsCanada, 2006). No gender differences were found regarding parental income ($p = 0.42$), personal source of income ($p = 0.599$), personal income ($p = 0.115$), household income ($p = 0.502$), or poverty ($p = 0.348$). However, males were more likely than females to report not living with their parents (54.72% vs. 29.7%, respectively; $\chi^2 (1) = 9.2$, $p = 0.003$).

6.2.4.2 Employment status

Almost a third of the sample (31.21%) reported working full time, while 19.11% reported being in school and working part time. The remaining 49.68% of participants reported working part time, unemployed/laid off and looking for work, unemployed/laid off and not looking for work, in school, keeping house, on maternity leave, not working for pay, or a combination of these. However, 57.94% of working participants reported feeling overqualified for their current jobs. No gender differences were found for either variable ($p = 0.298$, $p = 0.303$, respectively), however, non-students were less likely to report having no income than students (4.05% vs. 20.25%, respectively; $\chi^2 (12) = 39.73$, $p < 0.0001$, cell $\chi^2 = 4.17$).

6.2.4.3 Education level

Most of the sample was well educated, with 71.62% having completed college/university or a higher education, while 23.23% completed high school. There was no gender difference with regard to education level ($p = 0.566$).

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[10] However, the 2001 Census reports income for those aged 15 years and over, thus including a wider age range than the current study.

6.2.4.4 Stressful work environment

Among working participants, the DCSQ total mean was 24.33 (SD = 4.06, median = 24, possible score range 10 to 40, actual score range 13 to 40; 40 indicating high work demand and low work control), the demand subscale mean was 13.07 (SD = 3.14, median = 13, possible and actual score range 5 to 20; 20 indicating high work demand), and the control subscale mean was 13.74 (SD = 3.49, median = 14, possible and actual score range 5 to 20; 20 indicating high work control). Past research has reported similar mean scores for the demand subscale, but higher mean scores for the control subscale. For example, a study conducted among Norwegians born between 1953 and 1957 reported a demand subscale mean of 13.81 (SD = 2.72) among males and 13.4 (SD = 2.91) among females (Sanne, Mykletun, Dahl, Moen, & Tell, 2005). It also reported a control subscale mean of 18.41 (SD = 3.19) among males and 17.41 (SD = 3.41) among females (Sanne, Mykletun et al., 2005). No gender differences were found in the current study among the three measures, ($p = 0.554$, $p = 0.24$, $p = 0.729$, respectively). Internal consistency (Cronbach's α) for the demand subscale was 0.69 and 0.70 for the control subscale, indicating good and reliable subscales (Katz, 1999). However, if the variable 'does your job require doing the same tasks over and over again' was removed from the control subscale, Cronbach's α would have increased to 0.79.

6.2.4.5 Limited health access

The majority of the sample (87.82%) reported having a medical or family doctor, while almost half of the sample (42.68%) reported needing health care in the past year, but not receiving it. Males were more likely than females to indicate that they did not have a medical or family doctor (20.37% vs. 7.92%, respectively; $\chi^2 (1) = 5.07$, $p = 0.038$). However, no gender difference was found with regard to inability to access health care ($p = 0.736$).

6.2.5 Sexual division of power characteristics

6.2.5.1 Condom-use skills

Overall, participants scored moderately on the condom-use skills scale, with a mean of 3.89 (SD = 1.75, median = 4, possible and actual score range 0 to 6; 6 indicating high condom-use skills). Males scored significantly higher on the scale than did females (4.39 vs. 3.61, respectively; t (154) = -2.67, p = 0.008). Internal consistency (Cronbach's α) for the condom-use skills scale was 0.73, indicating good reliability (Katz, 1999).

6.2.5.2 Self-efficacy to avoid HIV

The sample scored relatively high on self-efficacy to practice safer sex, with a mean of 18.79 (SD = 4.08, median = 19, possible and actual score range 6 to 24; 24 indicating high self-efficacy to practice safer sex). No gender difference was found (p = 0.713). Internal consistency (Cronbach's α) for the self-efficacy to practice safer sex scale was 0.8, indicating strong reliability (Katz, 1999).

6.2.5.3 Assertive communication skills

The sample scored a mean of 15.52 (SD = 3.11, median = 16, possible and actual score range 5 to 20; 20 indicating assertive and cooperative communication skills) on assertive and cooperative communication. Females reported higher assertive and cooperative communication ability than did males (15.96 vs. 14.76, respectively; t (152) = 2.33, p = 0.021). Internal consistency (Cronbach's α) for the communication scale was 0.76, indicating good reliability (Katz, 1999).

6.2.5.4 Alcohol and drug abuse

Thirty percent of the sample reported ever smoking cigarettes on a daily basis, on an average of 44.61 months (SD = 45.03, median = 30, range = 0 to 200), with no duration gender difference (p = 0.919) (see Table 9).

Table 9. Alcohol & Drug Use

	Nª (%)
Have Smoked Cigarettes on a Daily Basis	**46 (29.68)**
Currently Smoking	
No, not at all	110 (70.97)
Yes, occasionally	27 (17.42)
Yes, daily	18 (11.61)
Total	**155 (100)**
Alcohol Frequency Over Past 12 Months	
Never	39 (25.16)
Less than once a month	29 (18.71)
Once a month	15 (9.68)
2-3 times a month	37 (23.87)
Once a week	19 (12.26)
2-3 times a week	13 (8.39)
4-6 times a week	2 (1.29)
Daily	1 (0.65)
Total	**155 (100)**
Consuming 5+ Drinks per Occasion Over Past 12 Months	
Never	74 (47.44)
Less than once a month	35 (22.44)
Once a month	16 (10.26)
2-3 times a month	15 (9.62)
Once a week	11 (7.05)
2-3 times a week	4 (2.56)
Daily	1 (0.64)
Total	**156 (100)**
Tried/Used Illegal Drugs	**72 (46.15)**
Used Illegal Drugs on a Daily Basis	**33 (21.15)**
Ever Injected Illegal Drugs	**5 (3.21)**

ª Sample sizes vary due to missing values

However, males were marginally more likely than women to report ever smoking (39.62% vs. 24.75% respectively; χ^2 (1) = 3.67, p = 0.065). At the time of the survey, 70.97% of the sample were non-smokers, while the remaining participants occasionally (17.42%) or

smoked daily (11.61%). In addition, 25.16% did not drink alcohol in the past year, while

23.87% drank alcohol 2-3 times a month. Twenty percent of participants reported drinking 5 or

more alcoholic beverages two times a month or more. No gender differences were found among

current smokers (p = 0.328), frequency of alcohol use (p = 0.437), or binge drinking (p = 0.439).

Regarding illegal drug use, 46.15% reported ever trying or using them, while 21.15% indicated

using them on a weekly basis. Only 3.21% indicated ever injecting non-prescribed drugs. No

gender differences were found regarding drug use (p = 0.398), weekly drug use (p = 0.543), or

injection drug use (p = 0.343).

6.2.5.5 Perceived control over condom use

The total sample reported moderate perceived control over condom use; with 55.13%

indicating that they believed they could get their partner to use a condom and 29.49% indicating

that they already used condoms. The remaining 15.38% were not sure or did not believe they

could get their partner to use a condom. Seventy-five percent of participants indicated that they

thought they knew how to use a condom and 63.06% reported that they thought they can always

have condoms available for use. Males were more likely than females to report already using

condoms (46.3% vs. 20.79%, respectively; χ^2 (3) = 13.18, p = 0.004) and less likely than females

to report not knowing how to use condoms (0% vs. 7.84%, respectively; χ^2 (2) = 6.84, p =

0.033). No gender difference was found regarding always having condoms available (p = 0.692).

6.2.5.6 Abuse

With regard to abuse among this sample, 50.43% reported that their current partner said

things to hurt them, 34.39% reported that their partner tried to control them, 7.01% indicated that

their partner threatened to physically hurt them, and 7.64% have been physically hurt by their

current partner. In addition, 5.77% indicated that they have been afraid of being physically hurt by their current partner, and among these participants, 44.44% reported being abused. Fifteen percent of the sample reported being forced to have sex in the past, with 4.55% of these participants younger than 15 years old when the event occurred. Overall, 21.15% of the sample indicated that they have been physically, sexually, or verbally abused by a previous partner.

No gender differences were found regarding having a partner verbally abuse them ($p = 0.439$), being afraid of future abuse ($p = 0.762$), being threatened with abuse ($p = 0.161$), having ever been forced to have sex ($p = 0.795$), or being forced to have sex when they were younger than 15 years ($p = 1.0$). However, males were significantly more likely to report being physically abused once a month or less by their current partner (12.96% vs. 0.98%, respectively; $\chi^2 (4) = 14.92$, $p = 0.005$). In addition, males were marginally more likely than females to report being controlled several times a day by their current partner (7.41% vs. 0.98%, respectively; $\chi^2 (6) = 10.42$, $p = 0.108$). Lastly, females were marginally more likely than males to have been abused more than once in the past (13.73% vs. 5.66%, respectively; $\chi^2 (2) = 4.78$, $p = 0.092$).

With regard to social desirability and abuse, two of the seven variables were found to be correlated with social desirability. Being threatened with abuse was significantly associated with social desirability; participants who reported never being threatened had more socially desirable answers than did those who reported being threatened once a month or less (6.13 vs. 4.00, respectively; $F (3) = 3.6$, $p = 0.015$, Tukey's post hoc test $\alpha = 0.05$). In addition, ever being forced into sex was associated with social desirability, where participants who reported never having being forced had more socially desirable answers than did those who reported being forced into sex once in their lives (6.12 vs. 4.67, respectively; $F (2) = 3.47$, $p = 0.034$, Tukey's post hoc test $\alpha = 0.05$).

6.2.5.7 High-risk sexual partner

With regard to having a high-risk partner, the sample reported that their current partners have had a mean of 5.76 (SD = 18.84, median = 2, range = 0 to 200) past sexual partners, with females reporting that their partners have had marginally more sexual partners than males (7.38 vs. 2.89, respectively; t (110) = 1.84, p = 0.069). Two percent indicated that their partners currently had concurrent partners, while 5.1% did not know. In addition, 12.1% indicated that their current partner has had concurrent partners in the past, while 15.29% did not know. Three percent indicated that their partners have paid for sex, 2.55% reported that their partners have injected non-prescribed drugs, and while 1.27% reported that their partners were HIV positive, 7.64% did not know. No gender differences were found regarding current concurrent partners (p = 0.441), past concurrent partners (p = 0.693), paying for sex (p = 0.314), injecting drugs (p = 0.656), or partner being HIV positive (p = 0.148).

6.2.5.8 Partner who disapproves of practicing safer sex

Most of the sample (88.46%) indicated that their partners would not resist if they were to ask them to use a condom, with no gender difference (p = 0.756).

6.2.5.9 Exposure to sexually explicit media

The sample reported that they watched a mean of 10.61 (SD = 81.31, median = 1, range = 0 to 1,000) X-rated movies in the past three months, with no gender difference (p = 0.253).

6.2.5.10 Access to school-based HIV prevention education

A majority of the sample (71.43%) reported discussing HIV prevention within a school class, while 8.44% could not remember. No gender difference was found (p = 0.286).

6.2.6 Structure of cathexis characteristics

6.2.6.1 Family influence regarding HIV prevention

Growing up, 74.36% of the sample lived with both of their parents, while 21.15% lived with only their mothers. The remaining 4.49% lived with only their fathers, step-parents, or grandparents. Almost half of the sample reported college/university as the highest level of education their mothers and fathers had completed (40.38% vs. 48.7%, respectively). Eighty-seven percent of participants reported discussing marriage with the people that raised them while growing up, 50.65% reported discussing premarital sex, 39.22% reported discussing contraception, and 31.17% reported discussing HIV prevention. No gender differences were found regarding who they lived with while growing up ($p = 0.5$), mother's or father's education ($p = 0.429$, $p = 0.479$, respectively), discussing marriage ($p = 0.208$), discussing contraception ($p = 0.606$), or discussing premarital sex ($p = 0.498$). However, males were more likely than females to report discussing HIV prevention (48.15% vs. 22.22%, respectively; $\chi^2 (1) = 10.91$, $p = 0.002$).

6.2.6.2 Knowledge of HIV prevention

The sample scored a mean of 10.34 (SD = 1.52, median = 11, possible score range 0 to 12, actual score range 5 to 12; 12 indicating high knowledge of HIV prevention) on the HIV Risk Knowledge Test, with no gender difference ($p = 0.721$).

6.2.6.3 Negative beliefs not supportive of safer sex

The sample scored a mean of 28.3 (SD = 7.39, median = 28, possible and actual score range 8 to 40; 40 indicating positive attitudes towards condoms) on the Attitudes towards

Condoms Scale, with no gender difference (p = 0.787). Internal consistency (Cronbach's α) for the Attitudes towards Condoms Scale was 0.88, indicating excellent reliability (Katz, 1999).

6.2.6.4 Invulnerability to HIV/AIDS

Of participants who reported past sexual partners, 72.28% reported that they were not concerned at all that they might have had sex with someone who may have given them the HIV virus, while 7.92% were very concerned. Overall, 63.46% of the sample reported that there is no chance that they will get HIV, while 1.28% indicated a high chance. Lastly, 60% reported that they were not worried at all about getting HIV, while 9.03% were very worried. There were no gender differences regarding having concern about having had sex with an infected partner (p = 0.383) or being worried about getting HIV (p = 0.602). However, males were more likely than females to report believing they had a high chance of getting HIV (3.7% vs. 0%, respectively; χ^2 (3) = 10.99, p = 0.012).

Concern about having had sex with someone who may have transmitted the HIV virus was associated with partners having concurrent partners, where those who did not know if their partners currently had concurrent partners were more likely to be a little bit concerned than those who knew their partners did not have concurrent partners (50% vs. 11.7%, respectively; χ^2 (6) = 14.62, p = 0.023). Similarly, those who did not know if their partners currently had concurrent partners were more likely to be a little bit concerned than those who knew their partners currently had concurrent partners (50% vs. 0%, respectively; χ^2 (6) = 14.62, p = 0.023). In addition, those who did not know if their partners currently had concurrent partners were more likely to be very concerned than those who knew their partners did not have concurrent partners (33.33% vs. 6.38%, respectively; χ^2 (6) = 14.62, p = 0.023). Similarly, those who did not know if their partners currently had concurrent partners were more likely to be very concerned than

those who knew their partners currently had concurrent partners (33.33% vs. 0%, respectively; χ^2 (6) = 14.62, p = 0.023).

Concern about having had sex with someone who may have transmitted the HIV virus was marginally associated with partners ever injecting illegal drugs, where those who reported that their partners have injected were marginally more likely to be a little bit concerned than those who did not know if their partners ever injected (50% vs. 14.29%, respectively; χ^2 (6) = 12.15, p = 0.059). Similarly, those who reported that their partners have injected illegal drugs were marginally more likely to be a little bit concerned than those who reported that their partners have never injected (50% vs. 12.22%, respectively; χ^2 (6) = 12.15, p = 0.059). In addition, those who reported that they did not know if their partners have injected illegal drugs were marginally more likely to be very concerned than those who reported that their partners have injected (28.57% vs. 25%, respectively; χ^2 (6) = 12.15, p = 0.059). Similarly, those who reported that they did not know if their partners have injected illegal drugs were marginally more likely to be very concerned than those who reported that their partners have never injected (28.57% vs. 5.56%, respectively; χ^2 (6) = 12.15, p = 0.059).

Concern about having had sex with someone who may have transmitted the HIV virus was also associated with partner HIV status, where those who did not know if their partners were HIV positive were more likely to be moderately concerned than those who knew their partners were HIV positive (33.33% vs. 0%, respectively; χ^2 (6) = 18.32, p = 0.006). Similarly, those who did not know if their partners were HIV positive were more likely to be moderately concerned than those who knew their partners were not HIV positive (33.33% vs. 4.3%, respectively; χ^2 (6) = 18.32, p = 0.006). In addition, those who did not know if their partners were HIV positive were more likely to be very concerned than those who knew their partners

were HIV positive (33.33% vs. 0%, respectively; χ^2 (6) = 18.32, p = 0.006). Similarly, those who did not know if their partners were HIV positive were more likely to be very concerned than those who knew their partners were not HIV positive (33.33% vs. 6.45%, respectively; χ^2 (6) = 18.32, p = 0.006).

Chance of getting HIV was associated with partners having concurrent partners. Those who reported that their partners currently have concurrent partners were more likely to think they had a moderate chance of getting HIV than those who did not know if their partners had concurrent partners (33.33% vs. 0%, respectively; χ^2 (6) = 24.8, p = 0.0004). Similarly, those who reported that their partners currently have concurrent partners were more likely to think they had a moderate chance of getting HIV than those who reported that their partners did not have concurrent partners (33.33% vs. 1.38%, respectively; χ^2 (6) = 24.8, p = 0.0004). In addition, those who did not know if their partners currently had concurrent partners were more likely to think they had a high chance of getting HIV than those who reported that their partners had concurrent partners (12.5% vs. 0%, respectively; χ^2 (6) = 24.8, p = 0.0004). Similarly, those who did not know if their partners currently had concurrent partners were more likely to think they had a high chance of getting HIV than those who reported that their partners did not have concurrent partners (12.5% vs. 0.69%, respectively; χ^2 (6) = 24.8, p = 0.0004).

Chance of getting HIV was also associated with partners ever paying for sex. Those who reported that their partners have paid for sex were more likely to think they had a moderate change of getting HIV than those who did not know if their partners have ever paid for sex (25% vs. 0%, respectively; χ^2 (6) = 19.7, p = 0.003). Similarly, those who reported that their partners have paid for sex were more likely to think they had a moderate change of getting HIV than those who reported that their partners have never paid for sex (25% vs. 1.41%, respectively; χ^2

(6) = 19.7, p = 0.003). In addition, those who did not know if their partners have ever paid for sex were more likely to think they had a high chance of getting HIV than those who reported that their partner have paid for sex (10% vs. 0%, respectively; χ^2 (6) = 19.7, p = 0.003). Similarly, those who did not know if their partners have ever paid for sex were more likely to think they had a high chance of getting HIV than those who reported that their partner have never paid for sex (10% vs. 0.7%, respectively; χ^2 (6) = 19.7, p = 0.003).

Worry about getting HIV was associated with condom-use frequency, where those who reported using condoms every time they had sex were more likely (than those who reported using condoms almost always, sometimes, rarely, and never) to be very worried about getting HIV (22.22% vs. 7.89% (almost always), 6.67% (sometimes), 0% (rarely), 0% (never); χ^2 (12) = 23.16, p = 0.026, cell χ^2 = 4.14).

Worry about getting HIV was also associated with partners having concurrent partners. Those who reported that their partners currently had concurrent partners were more likely to be very worried about getting HIV than those who did not know if their partners had concurrent partners (66.67% vs. 25%, respectively; χ^2 (6) = 19.79, p = 0.003). Similarly, those who reported that their partners currently had concurrent partners were more likely to be very worried about getting HIV than those who reported that their partners did not have concurrent partners (66.67% vs. 6.94%, respectively; χ^2 (6) = 19.79, p = 0.003).

In addition, those who reported that their partners have ever paid for sex were more likely to be very worried about getting HIV than those who did not know if their partners had ever paid for sex (75% vs. 11.11%, respectively; χ^2 (6) = 23.38, p = 0.0007). Similarly, those who reported that their partners have ever paid for sex were more likely to be very worried about

getting HIV than those who reported that their partners have never paid for sex (75% vs. 7.04%, respectively; χ^2 (6) = 23.38, p = 0.0007).

Worry about getting HIV was marginally associated with partner HIV status, where those who reported that their partners were HIV positive were marginally more likely to be moderately worried about getting HIV than those who did not know if their partners were HIV positive (50% vs. 9.09%, respectively; χ^2 (6) = 12.31, p = 0.055). Similarly, those who reported that their partners were HIV positive were marginally more likely to be moderately worried than those who reported that their partners were not HIV positive (50% vs. 5.63%, respectively; χ^2 (6) = 12.31, p = 0.055). In addition, those who did not know if their partners were HIV positive were marginally more likely to be very worried about getting HIV than those who reported that their partners were HIV positive (27.27% vs. 0%, respectively; χ^2 (6) = 12.31, p = 0.055). Similarly, those who did not know if their partners were HIV positive were marginally more likely to be very worried about getting HIV than those who reported that their partners were not HIV positive (27.27% vs. 7.75%, respectively; χ^2 (6) = 12.31, p = 0.055).

6.2.6.5 Mistrust of the medical system

The sample scored a mean of 26.64 (SD = 5.61, median = 26, possible score range 10 to 50, actual score range 15 to 41; 50 indicating strong distrust of the medical system) on the Health Care System Distrust Scale, with no gender difference (p = 0.588). Past research among a mixed-ethnic sample reported a mean score of 29.4 (SD = 6.33, actual score range 12 to 36), and a mean of 28.3 (SD = 6.06) among participants who identified as White (Rose et al., 2004). Within the current study, internal consistency (Cronbach's α) for the Health Care System Distrust Scale was 0.65, indicating good reliability (Katz, 1999).

6.2.6.6 Conservative gender and cultural norms and traditional beliefs

The sample scored a mean of 14.94 (SD = 5.49, median = 14, possible score range 8 to 40, actual score range 8 to 36; 40 indicating traditional attitudes toward clearly defined gender roles) on the PAIR scale and a mean of 26.17 (SD = 8.11, median = 26, possible score range 11 to 55, actual score range 11 to 51; 55 indicating greater adherence to the traditional double standard) on the Double Standard Scale. Also, participants scored a mean of 30.99 (SD = 7.21, median = 30, possible score range 11 to 55, actual score range 17 to 48; 55 indicating traditional attitudes toward marriage and the family) on the Traditional Attitudes towards Marriage and the Family scale. Males held significantly more traditional attitudes than females via the PAIR scale (16.97 vs. 13.87, respectively; t (153) = -3.46, p = 0.0007). No gender differences were found regarding adherence to the traditional double standard (p = 0.126) or regarding the strength of traditional attitudes toward marriage and the family (p = 0.214). Internal consistency (Cronbach's α) for the PAIR Scale (0.76), the Double Standard Scale (0.80), and the Traditional Attitudes towards Marriage and the Family Scale (0.69) indicated good to strong reliability (Katz, 1999). However, if the variable 'sexual intercourse before marriage is acceptable for boys' was removed from the Traditional Attitudes towards Marriage and the Family Scale, Cronbach's α would have increased to 0.81.

6.2.6.7 Older partner

Partner age differed by a mean of 1.23 years (SD = 4.14, median = 1, range = -11 to 22). Females were more likely to report having an older partner than were males (mean age difference 2.6 vs. -1.39, respectively; t (81.9) = 5.78, p < 0.0001).

6.2.6.8 Desire to get pregnant

Six percent of participants reported that either they or their partner had a desire to get pregnant in the next year, with males reporting more of a desire than females (12.96% vs. 2.97%, respectively; χ^2 (1) = 5.82, p = 0.033).

6.2.6.9 Religious affiliation

Almost half of the sample (45.86%) reported a Muslim faith, 36.94% reported a Christian faith, 10.19% reported having no religious preference (agnostic), while the remaining 7.01% identified themselves as Jewish, Druze, spiritual, or atheist. However, the sample consisted of a significantly lower percentage of Muslims compared to the 2001 Canadian Census reported among Arabs (62.74% Muslim, χ^2 (1) = 19.12, p < 0.0001) (StatisticsCanada, 2002b). In addition, the current sample consisted of a significantly higher percentage of participants with no religious preference, and a similar percentage of Christians, compared to the 2001 Canadian Census reported among Arabs (2.79% no preference, χ^2 (1) = 28.95, p < 0.0001, 33.79% Christians, p = 0.404) (StatisticsCanada, 2002b).

Fifteen percent of participants reported attending religious services more than once a week, 29.94% reported attending religious services a few times a year, and 21.02% reported never attending. However, almost half of the sample (40.38%) reported that organized religion was very important in their lives, while 16.03% reported it being not important at all. Similarly, 47.13% reported that spirituality was very important in their lives, while 6.37% reported it being not important at all. There were no gender differences regarding religious preference (p = 0.216), attending religious services (p = 0.549), or importance of religion (p = 0.308) or spirituality (p = 0.486).

6.2.6.10 Depression or psychological distress

Over half of the sample (60.26%) reported feeling down, depressed, or hopeless in the last month, 61.54% reported being bothered by little interest or pleasure in doing things in the last month, while 52.9% reported both. In addition, 12.1% reported being diagnosed or treated for depression, and 5.16% reported being diagnosed or treated for a psychological disorder. There were no gender differences regarding feeling down (p = 0.229), being bothered by little interest (p = 0.862), being diagnosed/treated for depression (p = 0.608), or being diagnosed/treated for a psychological disorder (p = 0.718).

6.3 Factors Associated with HIV-Risk Behaviour

The following bivariate analyses were stratified by gender to examine if variables were associated with HIV risk differently for males and females. Multivariate analyses were also stratified by gender, in order to examine if different variables predicted HIV risk for males and females.

6.3.1 Factors associated with lifetime number of sexual partners

6.3.1.1 Sexual division of labour analyses among females

<u>Bivariate analyses</u>. Employment status was marginally associated with lifetime number of sexual partners, with employed females reporting more sexual partners than unemployed females (t (71.5) = 1.84, p = 0.071). In addition, females with a family or medical doctor reported more sexual partners than did females without a doctor (t (98.6) = -2.21, p = 0.03) (see Table 10).

Table 10. Bivariate Associations between Categorical Sexual Sexual Division of Labour Variables & Lifetime Number of Sexual Partners among Females

	N[a]	Mean # of sexual partners (SD)	p-value
Employment Status			
Employed	70	3.66 (12.28)	
Unemployed	32	0.94 (1.13)	
	102		**0.071**
Have a Family Doctor			
No	8	0.5 (0.76)	
Yes	93	3.02 (10.71)	
	101		**0.03**

[a] Sample sizes vary due to missing values

The remaining variables within the sexual division of labour were not found to be associated with number of sexual partners: having access to health care (p = 0.342), living in poverty (p = 0.598), education (p = 0.654), being underemployed (p = 0.277), and having a stressful job (p = 0.268, p_{demand} = 0.263, $p_{control}$ = 0.821). These remaining variables were not carried forward into the block regression analyses.

Block regression. Once fitted in a single model, 'having a family or medical doctor' was removed using backward selection, due to not being significant at the 0.25 level. The remaining variable was carried forward to the final regression model. Employed females reported marginally more sexual partners (see Table 11).

Table 11. Sexual Division of Labour Block Poisson Regression Model to Predict Lifetime Number of Sexual Partners among Females

	Parameter Estimate	Standard Error	Chi-Square	p-value
Age	-0.04	0.08	0.23	0.632
Income	0.40	0.15	6.74	0.009
Education Level	-0.25	0.45	0.30	0.581
Employment Status				
Employed	1.05	0.83	1.58	0.209
Unemployed *(ref)*	-	-	-	-

6.3.1.2 Sexual division of power analyses among females

<u>Bivariate analyses</u>. Females who reported more sexual partners were significantly more likely to have higher condom-use skills ($r = 0.21$, $p = 0.031$) or think that they knew how to use a condom compared to those that did not think they knew how to use one or were unsure ($t (70.5) = -2.57$, $p = 0.012$). Females who reported that their partners did not have concurrent partners or were unsure, were more likely than females who reported that their partners had concurrent partners, to have more sexual partners ($t (78.9) = 2.32$, $p = 0.023$) (see Table 12).

In addition, females who reported more sexual partners were significantly more likely to report an HIV-negative partner compared to those who did not know their partners' HIV status ($t (95.2) = 2.01$, $p = 0.047$). Females who had been controlled once a week or more by their current partners were also more likely to report more sexual partners compared to those who were controlled less often or not at all ($F (2) = 7.02$, $p = 0.001$, Tukey's post hoc test $\alpha = 0.25$).

Table 12. Bivariate Associations between Categorical Sexual Division of Power Variables & Lifetime Number of Sexual Partners among Females

	N[a]	Mean # of Sexual Partners (SD)	p-value
Think Knows How to Use a Condom			
No/Not sure	32	0.22 (0.87)	
Yes	70	3.99 (12.20)	
	102		**0.012**
Think Can Have Condoms Available			
No/Not sure	40	0.98 (1.59)	
Yes	62	3.98 (12.98)	
	102		**0.076**
Current Partner Controls You			
Never	69	1.59 (2.80)	
Less than once a month to 3 times a month	23	1.70 (2.82)	
Once a week or more	10	13.70 (30.87)	
	102		**0.001**
Current Partner Verbally Abuses You			
Never	56	1.34 (2.78)	
Less than once a month to 3 times a month	40	4.30 (15.74)	
Once a week or more	6	6.50 (6.77)	
	102		**0.251**
Current Partner Physically Hurts You			
Never	100	2.62 (10.20)	
Less than once a month or more	2	12.00 (11.31)	
	102		**0.201**
Ever Forced to Have Sex			
No	84	1.44 (2.72)	
Yes	17	9.59 (23.78)	
	101		**0.177**
History of Abuse			
Never	75	1.36 (2.23)	
Once or more	27	6.81 (19.26)	
	102		**0.154**
Would Partner Refuse Condom Use			
No/Don't know	98	2.88 (10.45)	
Yes	4	1.00 (1.15)	
	102		**0.126**
Partner Ever Had Concurrent Partners			
No	72	1.47 (2.93)	
Don't know	16	7.94 (24.63)	
Yes	14	3.79 (5.01)	
	102		**0.067**
Partner Has Multiple Partners			
No/Don't know	99	2.88 (10.39)	
Yes	3	0.33 (0.58)	
	102		**0.023**
Partner Ever Paid for Sex			
No/Don't know	98	2.89 (10.45)	
Yes	4	0.75 (0.96)	
	102		**0.07**
Partner HIV+			
No	94	2.99 (10.65)	
Don't know	8	0.63 (1.19)	
Yes	-	-	
	102		**0.047**

[a] Sample sizes vary due to missing values

Females who reported more sexual partners were marginally more likely to think they could have a condom available for use compared to those that did not think they could, or did not know if they could (t (63.8) = -1.8, p = 0.076). Females who did not know if their current partner ever had concurrent partners were marginally more likely to report more sexual partners compared to those who knew that their partners never had concurrent partners (F (2) = 2.78, p = 0.067, Tukey's post hoc test α = 0.25). Also, females who reported that their partners had never paid for sex or did not know if they ever did, were more likely to report more sexual partners than females who reported that their partners had paid for sex (t (59.5) = 1.85, p = 0.07).

In addition, females who reported more sexual partners were more likely[11] to have a history of being abused compared to those who have never been abused (t (26.3) = -1.47, p = 0.154) and have been physically hurt by their current partners compared to those who have not been hurt (t (100) = -1.29, p = 0.201). In addition, females who reported more sexual partners were more likely to have been forced to have sex compared to those never forced (t (16.1) = -1.41, p = 0.177), and more likely to think their partners would not resist using condoms or did not know if they would resist, compared to females who thought their partners would resist (t (42) = 1.56, p = 0.126).

The remaining variables within the sexual division of power were not found to be associated with lifetime number of sexual partners: frequency of alcohol consumption (p = 0.291), frequency of binge drinking (p = 0.991), currently smoking (p = 0.473), ever smoked (p = 0.258), duration of cigarette use (p = 0.585), ever tried/used illegal drugs (p = 0.5), ever used illegal drugs on a daily basis (p = 0.491), ever injected illegal drugs (p = 0.855), believing they can get their partners to use a condom (p = 0.886), assertive and cooperative communication (p =

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[11] These associations were not significant at the 0.05 level, but were under the 0.25 p-value cut-off for entry into the regression model which is later discussed.

0.304), self-efficacy to practice safer sex (p = 0.562), partner ever injected illegal drugs (p = 0.898), number of sex partners their partner has had (p = 0.452), exposure to x-rated media (p = 0.972), being verbally abused (p = 0.251), being threatened with abuse (p = 0.435), fear of being abused (p = 0.594), having been forced into sex under the age of 15 (p = 0.772), and ever discussed HIV prevention at school (p = 0.314). These remaining variables were not carried forward into the block regression analyses.

Block regression. Once fitted in a single model, the following variables were removed using backward selection, in this order, due to not being significant at the 0.25 level: partner currently has multiple partners, partner ever paying for sex, partner's HIV status, partner would refuse to use condoms, physical abuse by current partner, and controlled by partner less than once a month to 3 times a month. The remaining variables were carried forward to the final regression model.

Females who reported a higher number of sexual partners had been controlled by their current partners, reported that their partners never had concurrent partners or did not know if they did, thought that could always have condoms available for use, thought they knew how to use condoms, have been forced into having sex, had a history of physical, sexual, and verbal abuse, and had high condom-use skills (see Table 13).

Table 13. Sexual Division of Power Block Poisson Regression Model to Predict Lifetime Number of Sexual Partners among Females

	Parameter Estimate	Standard Error	Chi-Square	p-value
Age	0.01	0.06	0.05	0.825
Income	0.26	0.09	7.84	0.005
Education Level	-0.21	0.29	0.50	0.480
Current Partner Controls You				
Never	-0.62	0.33	3.45	0.063
Less than once a month to 3 times a month	-	-	-	-
Once a week or more *(ref)*	-	-	-	-
Partner Ever Had Concurrent Partners				
No	0.74	0.46	2.61	0.106
Don't know	1.35	0.36	14.11	0.0002
Yes *(ref)*	-	-	-	-
Think Can Have Condoms Available				
No/Not sure *(ref)*	-	-	-	-
Yes	1.04	0.37	8.19	0.004
Think Knows How to Use a Condom				
No/Not sure *(ref)*	-	-	-	-
Yes	1.55	0.80	3.76	0.053
Ever Forced to Have Sex				
No	-0.93	0.36	6.66	0.010
Yes *(ref)*	-	-	-	-
History of Abuse				
Never	-0.98	0.35	8.04	0.005
Once or more *(ref)*	-	-	-	-
Condom-Use Skills	0.26	0.12	4.85	0.028

6.3.1.3 Structure of cathexis analyses among females

<u>Bivariate analyses</u>. Females who reported that religion was not really important in their lives were marginally more likely to report more sexual partners compared to those who thought religion was somewhat or very important (F (3) = 2.33, p = 0.079, Tukey's post hoc test α = 0.25). Those who reported being slightly worried about getting HIV compared to those not being worried at all, reported marginally more sexual partners (F (2) = 2.71, p = 0.072, Tukey's

post hoc test $\alpha = 0.25$)[12]. Lastly, females who had not discussed HIV prevention with their family while growing up were marginally more likely to report more sexual partners than those who had discussed it (t (88.9) = 1.73, p = 0.087)[13] (see Table 14).

Table 14. Bivariate Associations between Categorical Structure of Cathexis Variables & Lifetime Number of Sexual Partners among Females

	N[a]	Mean # of Sexual Partners (SD)	p-value
Importance of Religion			
Not important at all	13	3.54 (5.33)	
Not really important	12	9.50 (28.53)	
Somewhat important	31	2.68 (4.02)	
Very important	46	0.93 (1.61)	
	102		**0.079**
Discussed HIV Prevention Growing up			
No	80	3.30 (11.51)	
Yes	22	1.00 (1.60)	
	102		**0.087**
Discussed Premarital Sex Growing up			
No	54	3.94 (13.76)	
Yes	48	1.52 (2.97)	
	102		**0.212**
Worried About Getting HIV			
Not worried at all	64	1.50 (2.75)	
Slightly worried	25	6.88 (19.95)	
Moderately/Very worried	13	1.38 (1.39)	
	102		**0.072**

[a] Sample sizes vary due to missing values

With regard to non-significant associations, but those below the 0.25 cut-off, females who did not discuss premarital sex with their family while growing up reported more sexual partners than those who did had discussed it (t (58.5) = 1.26, p = 0.212)[14]. In addition, females who had stronger attitudes towards the gendered double standard (r = 0.14, p = 0.165) and those

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[12] Due to missing observations within the regression analyses (discussed later), data on this variable was imputed for one missing participant within the 'Not worried at all' level, bringing the total sample size from 101 to 102 (before imputation: F (2) = 2.66, p = 0.08).

[13] Due to missing observations within the regression analyses (discussed later), data on this variable was imputed for three missing participants within the 'No' level, bringing the total sample size from 99 to 102 (before imputation: t (85) = 1.75, p = 0.08).

[14] Due to missing observations within the regression analyses (discussed later), data on this variable was imputed for two missing participants within the 'No' level, bringing the total sample size from 100 to 102 (before imputation: t (55.9) = 1.29, p = 0.2).

with higher HIV knowledge (r = 0.15, p = 0.139), were more likely to report more sexual

partners (see Table 15).

**Table 15. Correlations between Continuous Structure of Cathexis Variables &
Lifetime Number of Sexual Partners among Females**

	N[a]	Mean (SD)	r	p-value
Attitude Towards Gendered Double Standard	102	25.46 (7.94)	0.14	0.165
HIV Risk Knowledge	100	10.36 (1.49)	0.15	0.139

[a] Sample sizes vary due to missing values

The remaining variables within the structure of cathexis were not found to be associated

with lifetime number of sexual partners: religious affiliation (p = 0.934), frequency of attending

religious services (p = 0.418), importance of spirituality (p = 0.975), who they lived with while

growing up (p = 0.912), mother's education level (p = 0.439), father's education level (p =

0.727), feeling depressed during past month (p = 0.256), bothered by little interest during past

month (p = 0.465), depression test (combination of previous two variables) (p = 0.772), ever

being diagnosed/treated for depression (0.379), ever being diagnosed/treated with a

psychological disorder (p = 0.563), concern about ever having sex with someone who may have

transmitted HIV (p = 0.308), chances of getting HIV (p = 0.326), desire to get pregnant (p =

0.427), discussion of marriage (p = 0.3) or contraception (p = 0.639) with family, age difference

between participants and partners (p = 0.36), traditional attitudes towards gender roles (p =

0.574) or towards marriage and family (p = 0.33), distrust towards the health care system (p =

0.468), and attitudes towards condoms (p = 0.569). These remaining variables were not carried

forward into the block regression analyses.

Block regression. Once fitted in a single model, 'discussing HIV prevention with family while

growing up' was removed due to not being significant at the 0.25 level. The remaining variables

were carried forward to the final regression model.

Females who reported a high number of sexual partners reported that religion was not important at all to somewhat important, were slightly worried about getting HIV, have never talked about premarital sex with their family while growing up, had a stronger adherence to the traditional double standard, and had high HIV knowledge (see Table 16).

Table 16. Structure of Cathexis Block Poisson Regression Model to Predict Lifetime Number of Sexual Partners among Females

	Parameter Estimate	Standard Error	Chi-Square	p-value
Age	-0.03	0.07	0.16	0.685
Income	0.33	0.12	8.26	0.004
Education Level	0.25	0.36	0.48	0.486
Importance of Religion				
Not important at all	1.36	0.57	5.74	0.017
Not really important	1.96	0.51	14.49	0.0001
Somewhat important	1.34	0.52	6.50	0.011
Very important *(ref)*	-	-	-	-
Worried About Getting HIV				
Not worried at all *(ref)*	-	-	-	-
Slightly worried	0.71	0.39	3.27	0.071
Moderately/Very worried	0.11	0.67	0.03	0.868
Discussed Premarital Sex Growing up				
No *(ref)*	-	-	-	-
Yes	-1.03	0.40	6.69	0.010
Adherence to the Traditional Double Standard	0.03	0.02	1.54	0.214
HIV Risk Knowledge	0.39	0.14	7.52	0.006

6.3.1.4 Final model among females

<u>Model Building</u>

Final model. Once fitted in a single model, the following variables were removed using backward selection, in this order, due to not being significant at the 0.1 level: condom-use skills, worry about getting HIV, adherence to the traditional double standard, and controlled by partner.

Females who reported a higher number of sexual partners were employed, reported that they did not know if their partners ever had concurrent partners, thought that they could always have condoms available for use, thought they knew how to use condoms, had been forced into having sex, had a history of physical, sexual, or verbal abuse, reported that religion was either not really important or somewhat important, had never talked about premarital sex with their family while growing up, and had high HIV knowledge. The final regression model is presented in Table 17.

As previously discussed, acculturation[15] was entered into the final regression model, to explore its effect on all other variables. Once entered, acculturation was not significant at the 0.1 level, and was subsequently removed.

Multicollinearity. Most of the independent variables were not significantly correlated to one another. Among the cases that were significant, the variables were only weakly to moderately correlated (Pearson Correlation Coefficient ranging from 0.2 – 0.57).

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[15] Bivariate analyses did not identify an association between acculturation and number of sexual partners (r = 0.09, p = 0.379).

Table 17. Final Poisson Regression Model to Predict Lifetime Number of Sexual Partners among Females

	Parameter Estimate	Standard Error	Chi-Square	p-value
Age	-0.03	0.05	0.22	0.636
Income	0.24	0.09	8.08	0.005
Education Level	0.06	0.30	0.04	0.842
Employment Status				
Employed	1.01	0.41	6.07	0.014
Unemployed *(ref)*	-	-	-	-
Partner Ever Had Concurrent Partners				
No	0.02	0.48	0.00	0.969
Don't know	1.34	0.40	10.91	0.001
Yes *(ref)*	-	-	-	-
Think Can Have Condoms Available				
No/Not sure *(ref)*	-	-	-	-
Yes	0.98	0.35	7.90	0.005
Think Knows How to Use a Condom				
No/Not sure *(ref)*	-	-	-	-
Yes	2.28	0.67	11.64	0.0006
Ever Forced to Have Sex				
No	-0.76	0.34	5.03	0.025
Yes *(ref)*	-	-	-	-
History of Abuse				
Never	-0.56	0.34	2.72	0.099
Once or more *(ref)*	-	-	-	-
Importance of Religion				
Not important at all	0.56	0.58	0.91	0.340
Not really important	0.88	0.48	3.46	0.063
Somewhat important	1.72	0.41	17.61	<0.0001
Very important *(ref)*	-	-	-	-
Discussed Premarital Sex Growing up				
No *(ref)*	-	-	-	-
Yes	-0.81	0.30	7.15	0.008
HIV Risk Knowledge	0.18	0.10	3.25	0.072

Model Statistics:
Pearson Chi-Square (df) = 223.48 (80)
Log Likelihood = 142.78

6.3.1.5 Sexual division of labour analyses among males

<u>Bivariate analyses</u>. Control at work was associated with ones lifetime number of sexual partners, where males with high control at work reported significantly more sexual partners compared to those with lower control ($r = 0.3$, $p = 0.025$). Employment status was marginally associated with number of sexual partners, with employed males reporting more sexual partners than unemployed males ($t (50.2) = 1.84$, $p = 0.072$). In addition, males with a family or medical doctor reported marginally more sexual partners than did males without a doctor ($t (51.9) = -1.7$, $p = 0.095$) (see Table 18). Males living above the poverty line were also more likely to report more sexual partners compared to males whose data regarding poverty was missing ($F (2) = 1.8$, $p = 0.175$).

Table 18. Bivariate Associations between Categorical Sexual Division of Labour Variables & Lifetime Number of Sexual Partners among Males

	N	Mean # of Sexual partners (SD)	p-value
Employment Status			
Employed	37	8.54 (12.42)	
Unemployed	17	4.29 (4.48)	
	54		**0.072**
Has Medical/Family Doctor	**43**	**7.91 (11.84)**	**0.095**
Poverty			
Over poverty line	28	9.82 (13.35)	
Under poverty line	11	4.82 (4.92)	
Missing data	15	4.07 (6.69)	
	54		**0.175**

The remaining variables within the sexual division of labour were not found to be associated with number sexual partners: having access to health care ($p = 0.674$), education ($p = 0.922$), being underemployed ($p = 0.887$), and having a stressful job ($p = 0.256$, $p_{demand} = 0.601$).

Block regression. Once fitted in a single model, the following variables were removed using backward selection, in this order, due to not being significant at the 0.25 level: poverty and employment status. The remaining variables were carried forward to the final regression model. Males who reported a higher number of sexual partners had a family or medical doctor and reported higher control of their work (see Table 19).

Table 19. Sexual Division of Labour Block Poisson Regression Model to Predict Lifetime Number of Sexual Partners among Males[a]

	Parameter Estimate	Standard Error	t-value	p-value
Age	0.04	0.04	0.96	0.335
Income	0.29	0.13	2.25	0.024
Education Level	-0.65	0.31	-2.09	0.037
Have Family/Medical Doctor				
No *(ref)*	-	-	-	-
Yes	0.62	0.49	1.26	0.207
Control at Work	0.12	0.05	2.20	0.029

[a] Multiple imputation was used for missing observations in order to ensure that bias towards a significant result was avoided.

6.3.1.6 Sexual division of power analyses among males

Bivariate analyses. Males who reported more sexual partners were significantly more likely to think they knew how to use condoms compared to those who did not know or were unsure (t (51.9) = -3.53, p = 0.0009). Males who reported more sexual partners were significantly less likely to have ever been afraid of being abused by their current partners compared to those that have been afraid (t (51.3) = 2.27, p = 0.027) (see Table 20).

Males who reported more sexual partners were marginally more likely to have ever injected illegal drugs compared to those who had never injected (t (52) = -1.84, p = 0.072)[16]. In

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[16] Duration of smoking cigarettes was also marginally associated with the number of sexual partners among males (r = 0.41, p = 0.055), however, this association was no longer significant after imputation of 32 expected missing participants, imputing '0 months' as duration, as missing participants were non-smokers, bringing the total male sample size from 22 to 54 (r = 0.15, p = 0.268).

addition, males who reported more sexual partners were more likely[17] to have higher self

efficacy towards condom use compared to those with lower self efficacy ($r = 0.16$, $p = 0.25$).

Table 20. Bivariate Associations between Categorical Sexual Division of Power Variables & Lifetime Number of Sexual Partners among Males

	N[a]	Mean # of Sexual Partners (SD)	p-value
Fear of Abuse			
Never	50	7.48 (11.09)	
Once or more times	4	3.75 (0.96)	
	54		**0.027**
Think Know How to Use a Condom			
No/Not sure	8	1.75 (1.98)	
Yes	46	8.15 (11.33)	
	54		**0.0009**
Ever Injected Drugs			
No	51	6.57 (10.28)	
Yes	3	18.00 (14.73)	
	54		**0.072**
Current Partner Controls You			
Never	33	6.42 (9.65)	
Less than once a month to 3 times a month	9	3.89 (3.92)	
Once a week or more	12	11.83 (15.38)	
	54		**0.197**
Believe You Can Get Partner to Use Condoms			
No/Not sure	7	0.86 (1.86)	
We already use them	25	8.20 (11.28)	
Yes	22	8.09 (11.31)	
	54		**0.248**
Ever Forced to Have Sex			
No	46	5.65 (7.02)	
Yes	7	18.00 (22.07)	
	54		**0.191**
History of Abuse			
Never	48	7.60 (11.24)	
Once or more	6	4.00 (3.90)	
	54		**0.13**

[a] Sample sizes vary due to missing values

Males who were controlled by their current partners once a week or more compared to

less than once a month to three times a month reported more sexual partners ($F_{(2)} = 1.68$, $p =$

0.197). Males who reported more sexual partners were also more likely to already be using

condoms with their partners compared to those who did not think they could get their partners to

use condoms or were not sure ($F_{(2)} = 1.43$, $p = 0.248$) and more likely to have ever been forced

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[17] These associations were not significant at the 0.05 level, but were under the 0.25 p-value cut-off for entry into the regression model which is later discussed.

to have sex compared to those who have never been forced (t (6.19) = -1.47, p = 0.191). Lastly, males who reported more sexual partners were less likely to have experienced abuse in the past compared to those who have been abused (t (18.6) = 1.59, p = 0.13)[18].

The remaining variables within the sexual division of power were not found to be associated with lifetime number of sexual partners: frequency of alcohol consumption (p = 0.269), frequency of binge drinking (p = 0.407), currently smoking (p = 0.341), ever smoked (p = 0.675), duration of cigarette use (p = 0.268), ever tried/used illegal drugs (p = 0.403), ever used illegal drugs on a daily basis (p = 0.385), thinking they can always have condoms available for use (p = 0.993), assertive and cooperative communication (p = 0.417), condom-use skills (p = 0.542), partner ever injected illegal drugs (p = 0.656), number of sex partners their partner has had (p = 0.371), partner ever having concurrent partners (p = 0.933), partner's HIV status (p = 0.263), if partner would refuse using condoms (p = 0.468), exposure to x-rated media (p = 0.862), being verbally abused (p = 0.82), being threatened with abuse (p = 0.465), being physically abused (p = 0.773), and ever discussed HIV prevention at school (p = 0.485).
Block regression. Once fitted in a single model, the following variables were removed using backward selection, in this order, due to not being significant at the 0.25 level: history of abuse, having a controlling partner, fear of abuse, and self efficacy towards practicing safer sex. The remaining variables were carried forward to the final regression model.

Males who reported a higher number of sexual partners already used condoms with their partners or believed they could get their partners to use them, had injected illegal drugs, and had been forced into having sex (see Table 21).

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[18] Due to missing observations within the regression analyses (discussed later), data on this variable was imputed for one missing participant, within the 'Never' category, bringing the total male sample size from 53 to 54 (before imputation: t (19.2) = 1.6, p = 0.125).

Table 21. Sexual Division of Power Block Poisson Regression Model to Predict Lifetime Number of Sexual Partners among Males[a]

	Parameter Estimate	Standard Error	t-value	p-value
Age	0.08	0.04	1.90	0.057
Income	-0.01	0.15	-0.10	0.921
Education Level	-0.61	0.32	-1.92	0.055
Believe Can get Partner to Use Condoms				
No/Not sure *(ref)*	-	-	-	-
We already use them	3.14	1.36	2.32	0.021
Yes	3.01	1.37	2.20	0.028
Ever Injected Drugs				
No	-1.93	0.59	-3.26	0.001
Yes *(ref)*	-	-	-	-
Ever Forced to Have Sex				
No	-1.17	0.39	-2.99	0.003
Yes *(ref)*	-	-	-	-

[a] Multiple imputation was used for missing observations in order to ensure that bias towards a significant result was avoided.

6.3.1.7 Structure of cathexis analyses among males

<u>Bivariate analyses</u>. Males who reported more sexual partners were significantly less likely to have been diagnosed/treated for depression compared to not having been diagnosed/treated (t (30.1) = 3.02, p = 0.005). Males who reported negative attitudes towards condom use compared to more positive ones (r = -0.19, p = 0.175) and those who reported discussing contraception (t (27.2) = -1.5, p = 0.145), HIV prevention (t (37.2) = -1.32, p = 0.194), or premarital sex (t (45.1) = -1.25, p = 0.217) with their family while growing up compared to those that did not, reported[19] more sexual partners. Also, males living with both parents while growing up compared to living with other family members reported more sexual partners (F (2) = 1.7, p = 0.194, Tukey's post hoc test α = 0.35) (see Table 22).

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[19] These associations were not significant at the 0.05 level, but were under the 0.25 p-value cut-off for entry into the regression model which is later discussed.

Table 22. Bivariate Associations between Categorical Structure of Cathexis Variables & Lifetime Number of Sexual Partners among Males

	N[a]	Mean # of Sexual Partners (SD)	p-value
Diagnosed/Treated for Depression			
No	49	7.73 (11.10)	
Yes	5	2.00 (2.35)	
	54		**0.005**
Discussed Contraception Growing up			
No	32	5.19 (6.65)	
Yes	22	10.14 (14.47)	
	54		**0.145**
Discussed HIV Prevention Growing up			
No	28	5.32 (7.07)	
Yes	26	9.23 (13.46)	
	54		**0.19**
Discussed Premarital Sex Growing up			
No	25	5.32 (7.22)	
Yes	29	8.83 (12.92)	
	54		**0.217**
Lived with the Most While Growing Up			
Mother	12	4.33 (5.05)	
Both parents	37	9.00 (12.22)	
Other	4	4.00 (0.75)	
	53		**0.194**

[a] Sample sizes vary due to missing values

The remaining variables within the structure of cathexis were not found to be associated with lifetime number of sexual partners: religious affiliation ($p = 0.837$), frequency of attending religious services ($p = 0.997$), importance of religion ($p = 0.663$), importance of spirituality ($p = 0.935$), mother's education level ($p = 0.891$), father's education level ($p = 0.821$), feeling depressed during past month ($p = 0.379$), bothered by little interest during past month ($p = 0.714$), depression test (combination of previous two variables) ($p = 0.801$), ever being diagnosed/treated with a psychological disorder ($p = 0.537$), concern about ever having sex with someone who may have transmitted HIV ($p = 0.908$), chances of getting HIV ($p = 0.411$), worry about getting HIV ($p = 0.538$), desire to get pregnant ($p = 0.538$), discussion of marriage with family ($p = 0.381$), age difference between participants and partners ($p = 0.485$), traditional attitudes towards gender roles ($p = 0.918$) or towards marriage and family ($p = 0.276$), adherence

to the traditional double standard (p = 0.337), distrust towards the health care system (p = 0.954), and HIV knowledge (p = 0.994).

Block regression. Once fitted in a single model, the following variables were removed using backward selection, in this order, due to not being significant at the 0.25 level: discussing premarital sex with family while growing up and attitudes toward condoms. The remaining variables were carried forward to the final regression model.

Males who reported a higher number of sexual partners reported living with both parents compared to only with mother while growing up, had discussed contraception and HIV prevention with their families while growing up, and had been diagnosed or treated for depression (see Table 23).

Table 23. Structure of Cathexis Poisson Regression Model to Predict Lifetime Number of Sexual Partners among Males[a]

	Parameter Estimate	Standard Error	t-value	p-value
Age	0.01	0.04	0.25	0.800
Income	0.32	0.13	2.48	0.013
Education Level	-0.55	0.27	-2.01	0.044
Lived with the Most While Growing Up				
Mother *(ref)*	-	-	-	-
Both parents	0.60	0.45	1.33	0.185
Other	-1.90	2.01	-0.95	0.349
Discussed Contraception Growing up				
No *(ref)*	-	-	-	-
Yes	0.65	0.35	1.85	0.064
Discussed HIV Prevention Growing up				
No *(ref)*	-	-	-	-
Yes	0.42	0.35	1.18	0.236
Ever Diagnosed/Treated for Depression				
No	-1.77	0.93	-1.89	0.059
Yes *(ref)*	-	-	-	-

[a] Multiple imputation was used for missing observations in order to ensure that bias towards a significant result was avoided.

6.3.1.8 Final model among males

<u>Model Building</u>

Final model. Once fitted in a single model, the following variables were removed using backward selection, in this order, due to not being significant at the 0.1 level: thinking they can always have condoms available for use, ever being forced into having sex, who they lived with while growing up, having a medical doctor, discussing contraception with family while growing up, and ever being diagnosed or treated for depression.

Males who reported a higher number of sexual partners reported higher control of their work, already used condoms with their partners or believed they could get their partners to use them, had injected illegal drugs, had discussed HIV prevention with their family while growing up, and were low acculturated to Western culture. The final regression model is presented in Table 24.

As previously discussed, acculturation[20] was entered into the final regression model, to explore its effect on all other variables. Once entered, acculturation was significant at the 0.1 level, and thus remained in the final regression model.

Multicollinearity. Most of the independent variables were not significantly correlated to one another. Among the cases that were significant, the variables were only weakly to moderately correlated (Pearson Correlation Coefficient ranging from 0.28 – 0.52).

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[20] Bivariate analyses did not identify an association between acculturation and number of sexual partners among males ($r = -0.13$, $p = 0.341$).

Table 24. Final Poisson Regression Model to Predict Lifetime Number of Sexual Partners among Males[a]

	Parameter Estimate	Standard Error	t-value	p-value
Age	0.08	0.04	2.10	0.037
Income	0.08	0.13	0.57	0.573
Education Level	-0.81	0.26	-3.11	0.002
Control at Work	0.14	0.04	3.26	0.002
Believe Can get Partner to Use Condoms				
No/Not sure *(ref)*	-	-	-	-
We already use them	3.52	1.07	3.30	0.001
Yes	3.31	1.05	3.17	0.002
Ever Injected Drugs				
No	-1.83	0.47	-3.87	0.0001
Yes *(ref)*	-	-	-	-
Discussed HIV Prevention Growing up				
No *(ref)*	-	-	-	-
Yes	0.72	0.29	2.44	0.015
Acculturation	-0.03	0.01	-2.29	0.022

[a] Multiple imputation was used for missing observations in order to ensure that bias towards a significant result was avoided.

6.3.2 Factors associated with condom-use risk

6.3.2.1 Sexual division of labour analyses among females

Bivariate analyses. Having a family doctor was significantly associated with condom-use risk, where females with a family or medical doctor were less likely to consistently use condoms than females without a doctor (t (49) = -8.84, p < 0.0001). Also, females living over the poverty line were significantly less likely to report using condoms compared to those whose poverty data was missing (F (2) = 3.25, p = 0.047, Tukey's post hoc test α = 0.25). Lastly, education was marginally associated with condom-use frequency, where females with college/university or graduate/professional education were less likely to report condom use than females with only a high school education (F (2) = 2.41, p = 0.1, Tukey's post hoc test α = 0.25) (see Table 25).

Table 25. Bivariate Associations between Categorical Sexual Division of Labour Variables & Condom-Use Risk among Females

	N[a]	Condom Risk[b] (SD)	p-value
Have a Family Doctor			
No	3	0.00 (0)	
Yes	50	1.56 (1.25)	
	53		< 0.0001
Poverty			
Over poverty line	32	1.84 (1.37)	
Under poverty line	3	0.67 (1.15)	
Missing data	19	1.05 (0.91)	
	54		0.047
Education Level			
High school & equivalent or less	9	0.78 (0.97)	
Technical school/College/University	40	1.58 (1.28)	
Graduate/Professional school	5	2.20 (1.30)	
	54		0.1

[a] Sample sizes vary due to missing values
[b] Condom risk refers to the mean score of condom-use frequency where 0 = no risk (always uses condoms) and 4 = high risk (never uses condoms)

The remaining variables within the sexual division of labour were not found to be associated with condom-use risk: work status ($p = 1.0$), having access to health care ($p = 0.525$), being underemployed ($p = 0.312$), and having a stressful job ($p = 0.851$, $p_{demand} = 0.335$, $p_{control} = 0.53$). These remaining variables were not carried forward into the block regression analyses.

Block regression. The variables selected for inclusion (all bivariate associations with a p-value $\leq$ 0.25) into the sexual division of labour block regression model consisted of education level, having a family or medical doctor, and poverty. Once fitted in a single model, none of the three variables were found to be significant at the 0.25 level, thus were not carried forward to the final regression model.

6.3.2.2 Sexual division of power analyses among females

Bivariate analyses. Believing they can get their partner to use a condom was significantly associated with condom-use risk. Females who believed they could get their partner to use a condom were less likely to use a condom compared to those that reported already using them with their partner, but were more likely to use a condom compared to those that did not believe

they could get their partner to use a condom or did not know if they could ($F_{(2)} = 4.06$, $p = 0.023$, Tukey's post hoc test $\alpha = 0.25$) (see Table 26). Females who did not believe they could get their partner to use a condom, or did not know if they could, were also less likely to use condoms than those who reported already using condoms with their partners ($F_{(2)} = 4.06$, $p = 0.023$, Tukey's post hoc test $\alpha = 0.25$). Females who reported low self-efficacy towards using condoms were less likely to use them consistently, compared to females with high self-efficacy ($r = -0.39$, $p = 0.004$).

Females who were being controlled by their partners reported less consistent use of condoms than did females who were not controlled ($t_{(52)} = -2.41$, $p = 0.02$). In addition, females who reported less frequent condom use reported thinking they could not always have condoms available for use or not know if they could, compared to those thinking that they can ($t_{(52)} = 2.19$, $p = 0.033$). Females who reported never being physically abused by their current partners, compared to being abused ($t_{(51)} = 2.9$, $p = 0.006$), reported less consistent condom use. Also, females who reported that their partners have never paid for sex or that they did not know if their partners have paid for sex, compared to those who reported that their partners have paid for sex ($t_{(51)} = 2.9$, $p = 0.006$), reported less consistent condom use.

Females who reported less consistent condom use were marginally less likely to drink alcohol, compared to those who did drink ($t_{(52)} = 1.69$, $p = 0.097$), and marginally more likely to be verbally abused by their partner, compared to females who were not being abused ($t_{(52)} = -1.65$, $p = 0.105$).

Table 26. Bivariate Associations between Categorical Sexual Division of Power Variables & Condom-Use Risk among Females

	N	Condom Risk[a] (SD)	p-value
Believe Can Get Partner to Use Condoms			
We already use them	20	1.00 (1.03)	
No/Not sure	5	2.60 (0.89)	
Yes	29	1.66 (1.34)	
	54		**0.023**
Think Can Have Condoms Available			
No/Not sure	16	2.06 (1.44)	
Yes	38	1.26 (1.13)	
	54		**0.033**
Verbally Abused by Partner			
Never	23	1.17 (1.27)	
Yes, once or more	31	1.74 (1.24)	
	54		**0.105**
Controlled by Partner			
Never	33	1.18 (1.26)	
Yes, once or more	21	2.00 (1.14)	
	54		**0.02**
Physically Abused by Partner			
Never	52	1.52 (1.29)	
Yes, once or more	2	1.00 (0)	
	54		**0.006**
Partner Ever Paid for Sex			
No/Don't know	52	1.52 (1.29)	
Yes	2	1.00 (0)	
	54		**0.006**
Alcohol Consumption in Past 12 Months			
Never	5	2.40 (0.89)	
Yes, once or more	49	1.41 (1.27)	
	54		**0.097**

[a] Condom risk refers to the mean score of condom-use frequency where 0 = no risk (always uses condoms) and 4 = high risk (never uses condoms)

The remaining variables within the sexual division of power were not found to be associated with condom-use risk: frequency of binge drinking (p = 0.58), currently smoking (p = 0.538), ever smoked (p = 0.38), duration of cigarette use (p = 0.537), ever tried/used illegal drugs (p = 0.425), ever used illegal drugs on a daily basis (p = 0.817), ever injected illegal drugs (p = 0.695), think they know how to use a condom (p = 1.0), think partner would refuse using condoms (p = 0.26), assertive and cooperative communication (p = 0.654), condom-use skills (p = 0.885), partner ever injected illegal drugs (p = 0.818), partner currently having concurrent partners (p = 0.695), partner ever having concurrent partners (p = 0.307), number of sex partners

their partner has had (p = 0.431), exposure to x-rated media (p = 0.367), being threatened with abuse (p = 1.0), fear of being abused (p = 1.0), having been forced into sex (p = 0.786), having been forced into sex under the age of 15 (p = 0.322), having a history of abuse (p = 0.58), and ever discussed HIV prevention at school (p = 0.817). These remaining variables were not carried forward into the block regression analyses.

Block regression. Once fitted in a single model, the following variables were removed using backward selection, in this order, due to not being significant at the 0.25 level: physical abuse by current partner, partner ever paying for sex, verbal abuse by current partner, frequency of alcohol consumption, and think can have condoms available for use. The remaining variables were carried forward to the final regression model.

Females who reported less frequent condom use were being controlled by their partners, had low self efficacy towards practicing safer sex, and did not believe they could get their partner to use condoms or did not know if they could (see Table 27).

Table 27. Sexual Division of Power Block Linear Regression Model to Predict Condom-Use Risk among Females

	Parameter Estimate	Standard Error	t-value	p-value
Age	0.05	0.06	0.89	0.377
Income	0.05	0.10	0.48	0.633
Education Level				
High school & equivalent or less *(ref)*	-	-	-	-
Technical school/College/University	0.33	0.48	0.69	0.494
Graduate/Professional school	0.94	0.76	1.23	0.224
Believe Can get Partner to Use Condoms				
No/Not sure *(ref)*	-	-	-	-
We already use them	-1.01	0.68	-1.49	0.143
Yes	-0.45	0.63	-0.70	0.485
Controlled by Current partner				
Never	-0.84	0.33	-2.57	0.014
Less than once a month or more *(ref)*	-	-	-	-
Self Efficacy Towards Practicing Safer Sex	-0.12	0.06	-2.06	0.046

6.3.2.3 Structure of cathexis analyses among females

<u>Bivariate analyses</u>. Females who reported not being worried at all about getting HIV were significantly less likely to consistently use condoms, compared to females who were slightly or moderately to very worried (F (2) = 3.83, p = 0.028, Tukey's post hoc test α = 0.25) (see Table 28). Females who reported no desire (own or partner's) to get pregnant were less likely to use condoms than females who had a desire (t (51) = 2.9, p = 0.006). Also, females who reported negative attitudes towards condom use, compared to more positive ones, were less likely to use condoms (r = -0.32, p = 0.017) (see Table 29).

Females who were not concerned at all about possibly having had sex with someone who may have transmitted HIV, were marginally less likely to use condoms, compared to women who were a little bit to very concerned (t (52) = 1.93, p = 0.059). Females with large age differences between themselves and their partners reported marginally less condom use, compared to females with less of an age difference (r = 0.24, p = 0.08).

With regard to non-significant associations, but those below the 0.25 cut-off, females who lived with both parents while growing up were less likely to use condoms than those who grew up with only their mothers (F (2) = 1.72, p = 0.19, Tukey's post hoc test α = 0.35). In addition, females who reported more traditional attitudes towards marriage and family were less likely to use condoms, compared to those with less traditional attitudes (r = 0.19, p = 0.161). Lastly, females who reported high HIV knowledge were less likely to use condoms, compared to those with lower knowledge (r = 0.2, p = 0.153).

Table 28. Bivariate Associations between Categorical Structure of Cathexis Variables & Condom-Use Risk among Females

	N	Condom Risk[a] (SD)	p-value
Worried About Getting HIV			
Not worried at all	30	1.87 (1.43)	
Slightly worried	16	1.25 (0.93)	
Moderately/Very worried	8	0.63 (0.52)	
	54		**0.028**
Concerned About Having had Sex with Someone HIV+			
Not concerned at all	41	1.68 (1.31)	
A little bit to very concerned	13	0.92 (0.95)	
	54		**0.059**
Desire to Get Pregnant in the Next 12 Months			
No	52	1.52 (1.29)	
Yes	2	1.00 (0)	
	54		**0.006**
Lived with While Growing Up			
Mother	14	1.14 (1.23)	
Both parents	37	1.70 (1.29)	
Other family member(s)	3	0.67 (0.58)	
	54		**0.19**

[a] Condom risk refers to the mean score of condom-use frequency where 0 = no risk (always uses condoms) and 4 = high risk (never uses condoms)

Table 29. Correlations between Continuous Structure of Cathexis Variables & Condom-Use Risk among Females

	N	r	p-value
Age Difference	54	0.24	0.080
Traditional Attitudes Towards Marriage and Family	54	0.19	0.161
HIV Risk Knowledge	54	0.20	0.153
Attitudes Towards Condom Use	54	-0.32	0.017

The remaining variables within the structure of cathexis were not found to be associated with condom-use risk: religious affiliation ($p = 0.457$), frequency of attending religious services ($p = 0.832$), importance of religion ($p = 0.569$), importance of spirituality ($p = 0.301$), mother's education level ($p = 0.749$), father's education level ($p = 0.594$), feeling depressed during past month ($p = 0.493$), bothered by little interest during past month ($p = 0.912$), depression test (combination of previous two variables) ($p = 0.435$), ever being diagnosed/treated for depression (0.671), ever being diagnosed/treated with a psychological disorder ($p = 1.0$), chances of getting HIV ($p = 0.643$), discussion of marriage ($p = 0.624$), contraception ($p = 0.317$), HIV prevention ($p = 0.505$), or premarital sex ($p = 1.0$) with family, traditional attitudes towards gender roles (p

= 0.965), adherence to the traditional double standard (p = 0.815), and distrust towards the health care system (p = 0.673). These remaining variables were not carried forward into the block regression analyses.

Block regression. Once fitted in a single model, the following variables were removed using backward selection, in this order, due to not being significant at the 0.25 level: concerned had sex with someone who may have transmitted HIV, traditional attitudes toward marriage and family, who they lived with while growing up, HIV knowledge, and worry about getting HIV. The remaining variables were carried forward to the final regression model.

Females who reported less frequent condom use had larger age gaps between themselves and their partners, had negative attitudes towards condoms, and had no desire (or partner had no desire) to become pregnant in the next year (see Table 30).

Table 30. Structure of Cathexis Block Linear Regression Model to Predict Condom-Use Risk among Females

	Parameter Estimate	Standard Error	t-value	p-value
Age	0.08	0.06	1.35	0.184
Income	0.14	0.10	1.34	0.188
Education Level				
High school & equivalent or less *(ref)*	-	-	-	-
Technical school/College/University	0.44	0.49	0.91	0.370
Graduate/Professional school	0.86	0.79	1.08	0.285
Age Difference	0.07	0.05	1.30	0.200
Attitudes Towards Condoms	-0.06	0.02	-2.91	0.006
Desire to Become Pregnant in next 12 Months				
No	1.18	0.84	1.41	0.165
Yes *(ref)*	-	-	-	-

6.3.2.4 Final model among females

Model Building

Final model. Once the three blocks were combined into a single model, the following variables

were removed using backward selection, in this order, due to not being significant at the 0.1

level: believe they can get their partner to use condoms, age difference between themselves and

their partners, and desire (or partner's desire) to get pregnant in the next 12 months. Only three

variables ultimately remained in the final model, once controlling for age, income, and education

level.

Females who reported less condom use were being controlled by their current partners,

had low self efficacy towards practicing safer sex, and had negative attitudes towards condoms.

The final regression model is presented in Table 31.

Table 31. Final Linear Regression Model to Predict Condom-Use Risk among Females

	Parameter Estimate	Standard Error	t-value	p-value
Age	0.06	0.06	1.08	0.285
Income	0.09	0.10	0.89	0.379
Education Level				
High school & equivalent or less *(ref)*	-	-	-	-
Technical school/College/University	0.47	0.47	1.01	0.319
Graduate/Professional school	1.01	0.76	1.34	0.188
Controlled by Current Partner				
Never	-0.57	0.33	-1.74	0.089
Less than once a month or more *(ref)*	-	-	-	-
Self Efficacy Towards Practicing Safer Sex	-0.11	0.05	-2.12	0.040
Attitudes Towards Condoms	-0.04	0.02	-2.03	0.048
Model Statistics:				
Observations used = 52				
F Value (df) = 4.06 (7)				
p-value = 0.002				
r² = 0.39				

As previously discussed, acculturation[21] was entered into the final regression model, to explore its effect on all other variables. Once entered, acculturation was not significant at the 0.1 level, and was subsequently removed. It did not explain the variation in condom-use risk over and above the variables of the application of the TGP.

Multicollinearity. Most of the independent variables were not significantly correlated to one another. Among the cases that were significant, the variables were only weakly to moderately correlated (Pearson Correlation Coefficient ranging from 0.2 – 0.55).

Residuals & outliers. A plot of residuals by predicted values of condom-use risk in the final model showed no clear pattern among residuals, and no outliers.

Power analyses. A power analysis was conducted among a variable that was significant at the .1 level within the bivariate analyses, but was non-significant within the final regression analyses. A power analysis was conducted among the age difference variable (power = 0.41), indicating low power. In order to have attained power of .8, the female sample size among those sexually active needed to have reached 130. Refer to Appendix I for details regarding power analyses.

6.3.2.5 Sexual division of labour analyses among males

<u>Bivariate analyses</u>. Education was associated with condom-use risk, where males with technical school, college, or university education were less likely to consistently use condoms than males with only a high school education ($F_{(2)} = 1.98$, $p = 0.151$) (see Table 32).

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[21] Bivariate analyses did not identify an association between acculturation and frequency of condom use among females ($r = 0.05$, $p = 0.734$).

Table 32. Bivariate Associations between Categorical Sexual Division of Labour Variables & Condom-Use Risk among Males

	N	Condom Risk[a] (SD)	p-value
Education Level			
High school & equivalent or less *(ref)*	13	0.62 (0.87)	
Technical school/College/University	27	1.30 (1.10)	
Graduate/Professional school	6	1.33 (1.21)	
	46		**0.151**

[a] Condom risk refers to the mean score of condom-use frequency where 0 = no risk (always uses condoms) and 4 = high risk (never uses condoms)

The remaining variables within the sexual division of labour were not found to be associated with condom-use risk: poverty (0.924), employment status (p = 0.317), having a family or medical doctor (p = 0.412), access to health care (p = 0.908), underemployment (p = 0.875), and having a stressful job (p = 0.817, p_{demand} = 0.957, $p_{control}$ = 0.832). These remaining variables were not carried forward into the block regression analyses.

Block regression. Once fitted in a single model, education was significant at the 0.25 level, and was thus carried forward to the final regression model. Males who reported less frequent condom use had a technical, college, university, graduate, or professional school education, compared to those only having a high school education (see Table 33).

Table 33. Sexual Division of Labour Block Linear Regression Model to Predict Condom-Use Risk among Males

	Parameter Estimate	Standard Error	t-value	p-value
Age	-0.02	0.04	-0.47	0.641
Income	-0.01	0.11	-0.10	0.923
Education Level				
High school & equivalent or less *(ref)*	-	-	-	-
Technical school/College/University	0.76	0.38	1.97	0.055
Graduate/Professional school	0.88	0.59	1.48	0.146

6.3.2.6 Sexual division of power analyses among males

Bivariate analyses. Males who were being controlled by their partners reported less consistent use of condoms than did males who were not controlled (t (30.6) = -2.61, p = 0.014) (see Table

34). In addition, males who reported currently smoking were less likely to use condoms, compared to non-smokers (t (45) = -2.31, p = 0.025). Males who had ever smoked on a daily basis were marginally less likely to use condoms compared to those who have never smoked (t (45) = -1.99, p = 0.053)[22].

With regard to non-significant associations, but those below the 0.25 cut-off, males who reported less frequent condom use reported thinking that they could not always have condoms available for use or not knowing if they could compared to thinking that they can always have condoms available (t (45) = 1.19, p = 0.239). Males who did not believe they could get their partner to use a condom or did not know if they could were less likely to use condoms than those that reported already using them with their partner (F (2) = 1.65, p = 0.204, Tukey's post hoc test α = 0.25). Males who have never been forced to have sex were less likely to use condoms compared to those who were forced (t (44) = 1.5, p = 0.142). Lastly, males who have never feared abuse from their partner reported less condom use compared to those that have feared abuse (t (44) = 1.22, p = 0.229)[23].

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[22] Due to missing observations within the regression analyses (discussed later), data on this variable was imputed for one missing participant within the 'No' level, bringing the total sample size from 46 to 47 (before imputation: t (44) = -1.87, p = 0.068).
[23] Due to missing observations within the regression analyses (discussed later), data on this variable was imputed for one missing participant within the 'Never' level, bringing the total sample size from 46 to 47 (before imputation: t (44) = 1.22, p = 0.229).

Table 34. Bivariate Associations between Categorical Sexual Division of Power Variables & Condom-Use Risk among Males

	N[a]	Condom Risk[b] (SD)	p-value
Believe Can Get Partner to Use Condoms			
We already use them	25	0.92 (1.00)	
No/Not sure	3	2.00 (1.73)	
Yes	19	1.26 (1.05)	
	47		0.204
Think Can Have Condoms Available			
No/Not sure	15	1.40 (1.18)	
Yes	32	1.00 (1.02)	
	47		0.239
Controlled by Current Partner			
Never	27	0.78 (0.80)	
Yes, once or more	20	1.60 (1.23)	
	47		0.014
Ever Forced to Have Sex			
No	39	1.23 (1.11)	
Yes	7	0.57 (0.79)	
	46		0.142
Fear of Abuse from Partner			
Never	43	1.19 (1.10)	
Yes, once or more	4	0.50 (0.58)	
	47		0.226
Current Smoker			
No	30	0.87 (0.94)	
Yes	17	1.59 (1.18)	
	47		0.025
Ever Smoked Daily			
No	30	0.90 (1.03)	
Yes	17	1.53 (1.07)	
	47		0.053

[a] Sample sizes vary due to missing values
[b] Condom risk refers to the mean score of condom-use frequency where 0 = no risk (always uses condoms) and 4 = high risk (never uses condoms)

The remaining variables within the sexual division of power were not found to be associated with condom-use risk: frequency of alcohol consumption ($p = 0.286$), frequency of binge drinking ($p = 0.508$), duration of cigarette use ($p = 0.369$), ever tried/used illegal drugs ($p = 0.533$), ever used illegal drugs on a daily basis ($p = 0.871$), ever injected illegal drugs ($p = 0.396$), think they know how to use a condom ($p = 0.759$), think partner would refuse using condoms ($p = 0.298$), partner ever having concurrent partners ($p = 0.876$), partner's HIV status ($p = 0.405$), partner ever injected illegal drugs ($p = 0.418$), number of sexual partners their current partner has ever had ($p = 0.989$), exposure to x-rated media ($p = 0.939$), being threatened

with abuse (p = 0.738), being verbally abused (p = 0.528), being physically abused (p = 0.373), having a history of abuse (p = 0.89), ever discussed HIV prevention at school (p = 0.375), assertive and cooperative communication (p = 0.357), condom-use skills (p = 0.425), and self efficacy towards practicing safer sex (p = 0.664). These remaining variables were not carried forward into the block regression analyses. It must be noted that 'having a partner who has paid for sex', 'having a partner who currently has concurrent partners', and 'having experienced forced sex as a child' were not included in the bivariate analyses, as all males answered the same way.

Block regression. Once fitted in a single model, the following variables were removed using backward selection, in this order, due to not being significant at the 0.25 level: having ever smoked daily and fear of abuse from partner. The remaining variables were carried forward to the final regression model.

Males who reported sexual risk (non-use of condoms) did not believe that they could get their partner to use them or did not know if they could, were being controlled by their partners, were current smokers, did not think they could always have condoms available for use or did not know if they could, and were never forced into having sex (see Table 35).

Table 35. Sexual Division of Power Block Linear Regression Model to Predict Condom-Use Risk among Males

	Parameter Estimate	Standard Error	t-value	p-value
Age	-0.14	0.04	-3.34	0.002
Income	0.28	0.10	2.70	0.011
Education Level				
High school & equivalent or less *(ref)*	-	-	-	-
Technical school/College/University	1.14	0.32	3.60	0.001
Graduate/Professional school	0.90	0.53	1.70	0.099
Believe Can get Partner to Use Condoms				
No/Not sure *(ref)*	-	-	-	-
We already use them	-1.45	0.58	-2.50	0.017
Yes	-0.51	0.59	-0.87	0.391
Current Partner Controls You				
Never	-0.78	0.29	-2.71	0.011
Less than once a month or more *(ref)*	-	-	-	-
Currently Smoke Cigarettes				
No	-0.42	0.31	-1.34	0.189
Yes *(ref)*	-	-	-	-
Think Can Have Condoms Available				
No/Not sure *(ref)*	-	-	-	-
Yes	-0.43	0.31	-1.37	0.180
Ever Forced to Have Sex				
No	1.03	0.39	2.63	0.013
Yes *(ref)*	-	-	-	-

6.3.2.7 Structure of cathexis analyses among males

<u>*Bivariate analyses*</u>. Muslim/Druze males were less likely to use condoms than were Christians, $(F (2) = 5.92, p = 0.005$, Tukey's post hoc test $\alpha = 0.25)$ (see Table 36). Males who reported never or rarely attending religious services were less likely to use condoms, compared to those that attended more often $(t (45) = 2.44, p = 0.019)$. Also, males who reported negative attitudes towards condom use, compared to more positive ones, were less likely to use condoms $(r = -0.37, p = 0.01)$.

With regard to non-significant associations, but those below the 0.25 cut-off, males who reported not being worried at all about getting HIV were less likely to consistently use condoms,

compared to males who were moderately to very worried (F (2) = 2.10, p = 0.135, Tukey's post

hoc test α = 0.25). In addition, males who reported having little interest in doing things in the

past month were less likely to use condoms, compared to those who did not report little interest (t

(45) = -1.55, p = 0.129)[24].

Table 36. Bivariate Associations between Categorical Structure of Cathexis Variables & Condom-Use Risk among Males

	N[a]	Condom Risk[b] (SD)	p-value
Worried About Getting HIV			
Not worried at all	25	1.40 (1.26)	
Slightly worried	11	1.09 (0.54)	
Moderately/Very worried	10	0.60 (0.84)	
	46		**0.135**
Frequency of Attending Religious Services			
Never/Rarely	20	1.55 (1.19)	
A few times a year or more	27	0.81 (0.88)	
	47		**0.019**
Religious Affiliation			
Christian	15	0.47 (0.64)	
Muslim/Druze	22	1.59 (1.18)	
No preference/Atheist/Spiritual	10	1.10 (0.88)	
	47		**0.005**
Have Little Interest in Doing Things in Past Month			
No	20	0.85 (0.81)	
Yes	27	1.33 (1.21)	
	47		**0.129**

[a] Sample sizes vary due to missing values
[b] Condom risk refers to the mean score of condom-use frequency where 0 = no risk (always uses condoms) and 4 = high risk (never uses condoms)

The remaining variables within the structure of cathexis were not found to be associated

with condom-use risk: importance of religion (p = 0.876), importance of spirituality (p = 0.607),

who they lived with while growing up (p = 0.45), mother's education level (p = 0.73), father's

education level (p = 0.485), feeling down or depressed during the previous month (p = 0.306),

depression test (p = 0.404), ever being diagnosed/treated for depression (0.807), ever being

diagnosed/treated with a psychological disorder (p = 0.283), desire (or partner's desire) to get

pregnant within the next 12 months (p = 0.429), chances of getting HIV (p = 0.432), concern that

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[24] Due to missing observations within the regression analyses (discussed later), data on this variable was imputed for one missing participant within the 'No' level, bringing the total sample size from 46 to 47 (before imputation: t (44) = -1.38, p = 0.176).

they may have had sex with someone who may have transmitted HIV (p = 0.496), discussion of marriage (p = 0.814), contraception (p = 0.713), HIV prevention (p = 0.959), or premarital sex (p = 402) with family, age difference between participant and partner (p = 0.703), traditional attitudes towards gender roles (p = 0.259) or towards marriage and the family (p = 0.375), adherence to the traditional double standard (p = 0.429), distrust towards the health care system (p = 0.517), or HIV knowledge (p = 0.471). These remaining variables were not carried forward into the block regression analyses.

Block regression. Once fitted in a single model, the following variables were removed using backward selection, in this order, due to not being significant at the 0.25 level: slightly worried about getting HIV and having little interest in doing things during the previous month. The remaining variables were carried forward to the final regression model.

Males who reported sexual risk (non-use of condoms) were Muslims (compared to others), not worried about getting HIV, never or rarely attended religious services, and had negative attitudes towards condoms (see Table 37).

Table 37. Structure of Cathexis Block Linear Regression Model to Predict Condom-Use Risk among Males

	Parameter Estimate	Standard Error	t-value	p-value
Age	-0.05	0.03	-1.53	0.135
Income	-0.05	0.08	-0.67	0.506
Education Level				
High school & equivalent or less *(ref)*	-	-	-	-
Technical school/College/University	1.12	0.28	3.97	0.0003
Graduate/Professional school	1.73	0.48	3.61	0.001
Religious Affiliation				
Christian	-1.14	0.26	-4.36	0.0001
Muslim/Druze *(ref)*	-	-	-	-
No preference/Atheist/Spiritual	-0.91	0.35	-2.64	0.012
Worried About Getting HIV				
Not worried at all *(ref)*	-	-	-	-
Slightly worried	-	-	-	-
Moderately/Very worried	-0.39	0.28	-1.39	0.175
Frequency of Attending Religious Services				
Never/Rarely	0.69	0.29	2.40	0.022
A few times a year or more *(ref)*	-	-	-	-
Attitudes Towards Condoms	-0.05	0.02	-2.80	0.008

6.3.2.8 Final model among males

Model Building

Final model. Once fitted in a single model, the following variables were removed using backward selection, in this order, due to not being significant at the 0.1 level: thinking they can always have condoms available for use, ever being forced into having sex, and attitudes toward condoms.

Males who reported sexual risk (non-use of condoms) had technical, college, university, graduate, or professional school education, did not believe they could get their partner to use condoms, or did not know if they could, were controlled by their current partners, were current smokers, were Muslims, were not worried about getting HIV, and never or rarely attended religious services. The final regression model is presented in Table 38.

Table 38. Final Linear Regression Model to Predict Condom-Use Risk among Males

	Parameter Estimate	Standard Error	t-value	p-value
Age	-0.07	0.03	-2.31	0.028
Income	0.14	0.08	1.66	0.107
Education Level				
High school & equivalent or less *(ref)*	-	-	-	-
Technical school/College/University	0.81	0.24	3.37	0.002
Graduate/Professional school	1.09	0.47	2.33	0.026
Believe Can get Partner to Use Condoms				
No/Not sure *(ref)*	-	-	-	-
We already use them	-1.20	0.48	-2.51	0.018
Yes	-0.48	0.43	-1.10	0.281
Controlled by Current Partner				
Never	-0.60	0.22	-2.72	0.011
Less than once a month or more *(ref)*	-	-	-	-
Currently Smoke Cigarettes				
No	-0.47	0.22	-2.10	0.043
Yes *(ref)*	-	-	-	-
Religious Affiliation				
Christian	-0.75	0.26	-2.87	0.007
Muslim/Druze *(ref)*	-	-	-	-
No preference/Atheist/Spiritual	-0.66	0.31	-2.10	0.044
Worried About Getting HIV				
Not worried at all *(ref)*	-	-	-	-
Slightly worried	-	-	-	-
Moderately/Very worried	-0.68	0.27	-2.53	0.017
Frequency of Attending Religious Services				
Never/Rarely	0.86	0.25	3.40	0.002
A few times a year or more *(ref)*	-	-	-	-

Model Statistics:
Observations used = 45
F Value (df) = 9.77 (12)
p-value = <0.0001
$r^2 = 0.79$

As previously discussed, acculturation[25] was entered into the final regression model, to explore its effect on all other variables. Once entered, acculturation was not significant at the 0.1 level, and was subsequently removed.

Multicollinearity. Most of the independent variables were not significantly correlated to one another. Among the cases that were significant, the variables were only weakly to moderately correlated (Pearson Correlation Coefficient ranging from 0.27 – 0.69).

Residuals & outliers. A plot of residuals by predicted values of condom-use risk in the final model showed no clear pattern among residuals, and no outliers.

Power analyses. A power analysis was conducted among a variable that was significant at the .1 level within the bivariate analyses, but was non-significant within the final regression analyses. A power analysis was conducted among the attitudes toward condoms variable (power = 0.75), indicating moderate power. In order to have attained power of .8, the male sample size among those sexually active needed to have reached 51. Refer to Appendix I for details regarding power analyses.

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[25] Bivariate analyses did not identify an association between acculturation and frequency of condom use among males (r = -0.15, p = 0.308).

7. DISCUSSION

Past studies have examined the associations between gender- and culturally-based factors and HIV-risk behaviour among heterosexual relationships (Beadnell et al., 2000; Klein et al., 2004; Kordoutis et al., 2000; Maswanya et al., 1999; Raj, Silverman, & Amaro, 2004; Sikkema et al., 1996; Wingood & DiClemente, 1998; Wingood et al., 2001; Wu et al., 2003). Wingood and DiClemente (2000) have been one of the few researcher to apply the TGP to HIV risk. The present study aimed to extend this application to examine gender- and culturally-specific factors and HIV-risk behaviour among Middle Eastern-Canadians within relationships.

7.1 Determinants of Lifetime Number of Sexual Partners

7.1.1 Determinants of lifetime number of sexual partners among females

Females who reported a higher number of sexual partners were employed, reported that they did not know if their partners ever had concurrent partners, thought that they could always have condoms available for use, thought they knew how to use condoms, have been forced into having sex, had a history of physical, sexual, or verbal abuse, reported that religion was not really important or somewhat important in their lives, have never talked about premarital sex with their family while growing up, and had high HIV knowledge. The majority of the factors in this model contradicted the predictions of the application of the TGP (Wingood & DiClemente, 2000). Forced sex, history of abuse, and discussing premarital sex were the only factors that were consistent with the application of the TGP (Wingood & DiClemente, 2000).

7.1.1.1 Sexual division of labour

Employment status was the only predictor of lifetime number of sexual partners from the sexual division of labour. Past research regarding this factor and HIV risk among females has

been inconsistent (Paranjape et al., 2006; Tawk et al., 2004), and thus is not surprising that employed females in this study reported more sexual partners than unemployed females. Future research should continue to explore the association between HIV risk and employment status, but with more scrutiny. For example, place of employment may be important, as females working in low-ranking jobs, such as factory or fast-food work, may be significantly different from females working at high-ranking jobs, such as a law firm. Alternatively, many females in this sample were still students (53.92%), thus their current jobs may not be their career, which may underestimate their employment potential. Future applications of the TGP must account for students, in addition to non-students, such as asking participants to indicate their field of study and future education and/or career plans.

Poverty was hypothesized to be associated with HIV risk, but was not significant at the bivariate level. However, considering that females in this sample were relatively young (22.16 years) and still in school, financial support from parents may have suppressed an association between poverty and HIV risk. In the future, participants should be asked to indicate if they are at all supported by their parents, even if this support is not their main source of income, and the amount per month they receive, which can be added to their personal incomes in order to calculate a more accurate income level.

Access to health care was also hypothesized to be associated with HIV risk, and having a medical doctor was only significant at the bivariate level. However, it may be more important to ask females how comfortable they are in discussing sensitive issues with their doctors, such as contraception use, and how often they visit their doctors, as opposed to only asking them if they have a doctor.

Lastly, stress in the workplace was also hypothesized to be associated with HIV risk, but was not significant at the bivariate level. Considering that females in this sample were relatively young and over half were still in school, they may know that their current jobs are only temporary, and stress at work may be quite low, as there is little concern about performance. Thus, this sample may be too homogenous, and future studies should use a larger and more heterogeneous sample.

7.1.1.2 Sexual division of power

As hypothesized, females who reported that they did not know if their current partner ever had concurrent partners reported more sexual partners. Females who have had many sexual partners may stay in a relationship for a short duration of time, thus 'know' their partner less than if they had more time with them. However, this association may not be accurate, considering that they were unsure about their partners' high-risk behaviour. In the future, conducting dyad studies would be beneficial in gaining accurate information on both partners' current and past risk behaviour.

Females who thought that they could always have condoms available for use and thought they knew how to use condoms also reported more sexual partners. These associations are inconsistent with the application of the TGP (Wingood & DiClemente, 2000); however, females who perceive that they have control over condom availability may feel less inhibited, knowing that they could have a condom with them if needing it. Thus, they may avoid worrying about condom availability when the need arises, and be more likely to agree to have sexual intercourse. Similarly, females who feel they know how to use a condom may feel confident using one when needed. Alternatively, females who have had more sexual partners may feel more knowledgeable about using condoms, due to experience. Unfortunately, using a cross-sectional

survey design does not allow us to specify causation direction, and future research must attempt to create a timeline with regard to acquired knowledge and an increase in sexual partners.

Consistent with the application of the TGP (Wingood & DiClemente, 2000) and as hypothesized in this study, females who reported being forced into having sex and reported a history of being physically, sexually, or verbally abused, reported more sexual partners. Past research has consistently supported the association between forced sex and abuse and HIV risk (Biglan et al., 1995; Davila, 2000; Gomez & Marin, 1996; Wu et al., 2003). A possible explanation may be that females who have experienced abuse enter relationships with the hope of finding affection and emotional support from male partners. Thus, they may associate sex with being loved and cared for, even though this may not always be the case. When these relationships end, they may continuously pursue others for the same emotional needs.

Condom-use skills was hypothesized to be associated with HIV risk, but was only significant at the bivariate level. Condom-use skills may have dropped from the regression model due to a small sample size, considering the number of variables within the final model. Alternatively, thinking one knows how to use a condom may have accounted for the variance explained by condom-use skills. However, a larger sample size must be used in future studies to rule out a lack of association due to low power.

A less assertive communication style was also hypothesized to be associated with HIV risk, but was not significant at the bivariate level. However, only general communication style was measured in this study, and communication around sexual matters must be measured in order to more effectively examine its association with number of sexual partners. For example, a question asking participants if they will or did discuss sexual intercourse with their partners

before having sex may indicate communication between partners specific to sexual intercourse. This will tell us if partners engage in sexual intercourse with or without communication.

Lastly, alcohol and drug abuse was hypothesized to be associated with HIV risk, but was not significant at the bivariate level. This is not surprising, considering males are more likely to use and abuse alcohol and drugs compared to females (Adlaf et al., 2005; McDonough & Walters, 2001; Ndinya-Achola et al., 1997); however, this association should be explored among a larger sample size, and among a more representative and heterogeneous sample.

7.1.1.3 Structure of cathexis

Among the structure of cathexis variables, females who never talked about premarital sex with the adults who raised them while growing up reported more sexual partners. This association was predicted by the application of the TGP (Wingood & DiClemente, 2000), and may illustrate a risk in lack of communication between parent and child, which has been supported by past research (DiClemente et al., 2001; Hutchinson et al., 2003). Parents have opportunities to teach and influence their children in positive ways, and communicating about sex and safer-sex practices is one opportunity to do so.

The association between importance of religion and number of sexual partners, however, contradicted the predictions of the application of the TGP (Wingood & DiClemente, 2000). Females who reported that religion was not really important or somewhat important in their lives reported more sexual partners. The application of the TGP (Wingood & DiClemente, 2000) outlines that an affiliation with a religion that forbids the use of contraception would increase HIV risk. Thus, this factor may be more useful in predicting contraception use, as opposed to the number of sexual partners. Females who feel religion is not very important to them may be less inhibited by religious values, while females who feel religion is very important may remain

monogamous. Thus, in the case of number of partners, religiosity may be protective of HIV risk among females. Past research has supported the association of high religiosity and less risky sexual behaviour (McCree, Wingood, DiClemente, Davies, & Harrington, 2003; Thornton & Camburn, 1989; Zaleski & Schiaffino, 2000).

Contrary to our hypotheses and the predictions of the application of the TGP (Wingood & DiClemente, 2000), females who had high HIV knowledge reported more sexual partners. Females with more knowledge regarding HIV prevention may be more likely to have sex with multiple partners, knowing what preventative measures to put in place, such as using water-based lubricant on condoms, as opposed to oil-based. Thus, HIV knowledge may offer females a sense of security. Alternatively, having had many sexual partners may increase HIV knowledge among females; however, due to the cross-sectional nature of this study, the direction of causation is unknown. Future research needs to examine how and when this knowledge is acquired, in addition to where it has been learned, such as from school education, friends, or past partners.

Holding traditional gender and cultural norms was hypothesized to be associated with HIV risk, but adherence to the traditional double standard was only significant at the bivariate level and dropped from the final regression model. Lack of association may have been due to low power and a relatively small and homogeneous sample, thus, a larger and more diverse sample must be used in future studies.

A desire to conceive was also hypothesized to be associated with HIV risk, but was not significant at the bivariate level. However, an association may have been suppressed considering that desire was measured among the female participant and her perception of her partner's desire to conceive. Thus, future studies should first separate this measure into two questions,

128

measuring desire to conceive among both the participant and her partner, and second, use a dyad study to measure this variable accurately, and obtaining data from both partners. Alternatively, a desire to conceive may not be as relevant in predicting number of sexual partners as it would be in predicting condom-use risk among females.

Lastly, having a perceived invulnerability to HIV/AIDS was hypothesized to be associated with HIV risk, but being worried about getting HIV was only significant at the bivariate level, and dropped from the final regression model. A low sample size may be to blame, and the association between vulnerability to HIV and number of sexual partners should continue to be examined, among a larger sample.

7.1.2 Determinants of number of lifetime sexual partners among males

Males who reported a high number of sexual partners reported high control at work, already using condoms with their partners or believing they could get their partners to use them, injecting illegal drugs, discussing HIV prevention with their family while growing up, and were less acculturated from Middle Eastern culture.

7.1.2.1 Sexual division of labour

Control at work was the only sexual division of labour variable that significantly predicted number of sexual partners. Contrary to the predictions of the application of the TGP (Wingood & DiClemente, 2000) and the hypotheses in this study, high control at work among males predicted a high number of sexual partners. Among males, control at work may increase personal confidence, and in turn increase success in personal relationships and increase opportunities in social settings. Thus, having power within economic and employment situations may increase HIV risk among males, and in turn, increase their female partners' HIV risk.

Further research needs to be conducted regarding this association and its impact on female risk, such as using dyad studies to examine associations between female HIV risk and their male partners' stress in the workplace, income, and job level. Alternatively, however, control at work may be a proxy for another factor involved in this association with risk behaviour. Thus, future studies must attempt to explore these underlying factors associating control at work with number of sexual partners.

Poverty was hypothesized to be associated with HIV risk, but was only significant at the bivariate level. However, personal income, which was controlled for in the regression models, may have accounted for the variance explained by poverty. In addition, education was hypothesized to be associated with HIV risk, but was not significant at the bivariate level. As previously discussed, considering that 42.59% of males were still students, measuring the highest level of education completed by participants is inaccurate. However, the application of the TGP (Wingood & DiClemente, 2000) does not take students into consideration, and obtaining current and future education information would be important in distinguishing those that have completed schooling, and those that are still in school.

Lastly, access to health care was hypothesized to be associated with HIV risk, but was only significant at the bivariate level and dropped from the final regression model. As previously discussed, this variable may not have been well measured. Future research should include questions that measure frequency of visits to doctors and why males visit their doctors (i.e., distinguishing between an STI vs. headaches).

7.1.2.2 Sexual division of power

Among the sexual division of power variables, males who believed they could get their partner to use condoms, or were already using condoms, reported more sexual partners. Among

males, using condoms or offering to use condoms may remove barriers to having sex with females, and may increase sexual opportunities. That is, females may be more willing to have sex with males if they offer to use condoms. Injection drug use was also found to be predictive of lifetime sexual partners, as theorized by Wingood and DiClemente (2000) and as hypothesized in the current study. Past research has also strongly supported the association between injection drug use and risky sexual behaviour (CDC, 2006; Molitor et al., 1999), and may indicate a risky or sensation-seeking personality, which is more common among males than females (Arnett, 1994).

Condom-use and assertive communication skills were hypothesized to be associated with HIV risk, but were not significant at the bivariate level. Condom-use skills may not be relevant in predicting lifetime number of sexual partners, as opposed to predicting condom use. Males do not need to know how to use condoms in order to have sex. On the other hand, a lack in finding an association between communication and number of sexual partners also may be due to the measure itself. In this study, communication in general was measured, and was not specific to sexual behaviour or HIV risk. Thus, future studies should include a variable measuring communication leading up to sexual intercourse, as strong and assertive communication among males may persuade females to engage in sexual intercourse.

Having a history of sexual or physical abuse was also hypothesized to be associated with HIV risk. Having a controlling partner, having been forced into sex, having a history of abuse, and being afraid of being abused by their partners were all associated with lifetime number of sexual partners, but only at the bivariate level. It is interesting that these associations were independently significant among males, considering that females are more likely to experience abuse (Foshee, 1996; Langhinrichsen-Rohling, Neidig, & Thorn, 1995). Future studies should

131

continue to explore these associations among a larger sample, as these variables may have dropped from the regression models due to a low sample size.

Lastly, having a high-risk partner was hypothesized to be associated with HIV risk, but was not significant at the bivariate level. This is not surprising, considering that males are more likely to engage in risky sexual behaviour, compared to females (Bruhin, 2003; Caron et al., 1993; Lary et al., 2004).

7.1.2.3 Structure of cathexis

Males who have discussed HIV prevention with their families while growing up also reported more sexual partners, contrary to the application of the TGP (Wingood & DiClemente, 2000). Gender norms may be at work here, where males are encouraged to gain sexual experience (AbuKhalil, 1997). Thus, in discussing HIV prevention, discussions regarding having sex may have been implicit, thus indirectly communicating to males that it is acceptable to have sex with more than one or numerous partners.

Holding traditional gender and cultural norms was hypothesized to be associated with HIV risk, but was surprisingly not significant at the bivariate level. Considering that males held more traditional attitudes towards gender roles, a low sample size may have suppressed an association, considering only a third of the sample were males. Thus, the association between holding traditional gender and cultural norms must be examined further among a larger sample size.

Having a desire to conceive was also hypothesized to be associated with HIV risk, but was not significant at the bivariate level. As previously discussed, a desire to conceive may be more relevant in predicting condom-use risk, as males who want to conceive a child may be less likely to use condoms. However, due to the fact that the variable also requested information

regarding partners' desire to conceive, the collapsed nature of this variable may have suppressed an association, because males who want to conceive may be more likely to have sex with more partners. Thus, this variable must be separated into two questions within a dyadic study, where both partners provide information regarding their own desire to conceive a child.

Knowledge of HIV prevention was also hypothesized to be associated with HIV risk, but was not significant at the bivariate level. A lack in finding an association may be due to a relatively small sample size. Alternatively, knowledge regarding their partners' risk behaviour may be more important than HIV knowledge in general. Thus, future studies should obtain information on how much a partner 'knows' the other partner, such as sexual history and HIV status, as individuals who perceive that they 'know' their partner may be more likely to engage in risky sexual practices (Stephenson et al., 1993).

Lastly, perceived invulnerability to HIV/AIDS was hypothesized to be associated with HIV risk, but was not significant at the bivariate level. This was surprising, considering that males were more likely to believe that they had a high chance of getting HIV. The association between perceived vulnerability to HIV and HIV risk should be examined among a larger sample, as low power may have suppressed an association.

7.1.2.4 Acculturation

Low acculturated males, those still holding on to many Arab values, were more likely to report more sexual partners. Past research supports the association between low acculturation from an ethnic culture (e.g., Cuban, Caribbean) to Western culture and HIV risk (Raffaelli et al., 2005; Ross et al., 2003). A possible explanation for this association is that Middle Eastern males may have been socialized into believing that sexual experience is associated with masculinity and power, thus participating in risky sexual practices (AbuKhalil, 1997). However, research

regarding the association between acculturation and HIV risk has been mixed (Ibanez et al., 2005; Le & Kato, 2006; Ross et al., 2003; So et al., 2005), thus studies must continue to examine this link.

7.1.3 Comparison of determinants of lifetime number of sexual partners by gender

It is clear that different constructs predict the number of lifetime sexual partners among males and females. Abuse among females is clearly a predictor of lifetime sexual partners among females, while drug use was predictive among males. However, considering that women are more likely to get abused (Foshee, 1996; Langhinrichsen-Rohling et al., 1995) and males are more likely to abuse drugs (Adlaf et al., 2005), the difference in predictors is not surprising. Perceived control over condom use among females was specific to what females could directly control, that is, having condoms and knowing how to use them; whereas among males, using condoms or persuading their partners to use them was predictive. Thus, both females and males may feel comfortable having sex with numerous partners, considering their perceived control over condom use.

Acculturation was predictive of number of lifetime sexual partners only among males. Thus, acculturation may not be an important factor among females, when it comes to the number of sexual partners. Whereas among males, the number of sexual partners may be an important measure of their identity and masculinity.

With regard to the hypothesized associations, few differences existed between males and females. The same number of hypothesized associations was reported among each gender, however, they differed. For example, as predicted, female HIV risk was associated with high-risk partners, history of abuse, and HIV prevention knowledge. On the other hand, predictions such as control at work, drug use, and acculturation were associated with HIV risk among males.

134

However, most of the hypothesized associations were not found among this sample on this dependent variable.

7.2 Determinants of Condom-Use Risk

7.2.1 Determinants of condom-use risk among females

Once variables were controlled for within the final regression model, only a few remained significantly associated with condom-use risk. Females who reported less condom use were being controlled by their current partners, had low self efficacy towards practicing safer sex, and had negative attitudes towards condoms. The combination of these variables explained 39% of the variance in the condom-use risk data, indicating that these factors modestly accounted for condom-use risk. The low r-square may indicate a poor choice of constructs included in the application of the TGP, thus a poorly constructed application of the TGP with regard to Middle Eastern-Canadian females. Thus, important factors that help to explain condom-use risk among females in this sample are still unknown, and future research must focus on gender- and cultural-specific factors associated with condom use among Middle Eastern-Canadian females. For example, communication specifically regarding condom use and contraception use may be important factors in predicting sexual risk among females and should be explored.

7.2.1.1 Sexual division of labour

The final model excludes factors from the sexual division of labour, which may just not be predictive of condom use among females in this sample. Past research has reported inconsistent findings regarding the associations between condom use and income/poverty (Anderson et al., 1999; Bankole et al., 1999), and condom use and employment status (Buchacz

et al., 2001; Kordoutis et al., 2000). It was hypothesized that poverty would be associated with

HIV risk, which it was only at the bivariate level. However, personal income was controlled for

within the regression models, and may thus have accounted for any variance poverty may have

had on condom-use risk.

It was also hypothesized that education would be associated with HIV risk, which it was

only at the bivariate level. Past research has consistently reported associations between condom

use and education level (Forste & Morgan, 1998; Saul et al., 2000; Sheeran et al., 1999), and a

low sample size in this study may have suppressed a significant association. Alternatively,

education may prove to be predictive of sexual risk when the highest level has been attained by

females. On average, females among this sample were relatively young (22.16 years), and

53.92% of the females were still in school, and thus have not reached their highest level of

education. In addition, the application of the theory does not account for females *still* in school,

and separating students from non-students may be important in future analyses.

Having limited access to health care was hypothesized to be associated with HIV risk.

Having a doctor was associated with condom-use risk, but only at the bivariate level. Inability to

access health care was not found to be associated with condom-use risk. Lack of finding an

association may have been due to the variables themselves and how they were measured. For

example, the variable 'having a medical doctor' tells us if females *have* a doctor, not if they

actually *access* their services, how comfortable they are in accessing them, or what they access

these services for (i.e., seasonal cold vs. sexual health). Similarly, the variable 'inability to

access health care' does not tell us why females were not able to receive health care in times of

need. It would be important to distinguish between reasons such as not being comfortable

talking to medical professionals, thinking their concern was not serious enough, or a doctor shortage.

Lastly, stress in the workplace was also hypothesized to be associated with HIV risk, but was not significant at the bivariate level. As previously discussed, females in this sample were relatively young and over half were still in school. Thus, their current jobs may only be temporary work, such as being retail associates or call-center operators, with the knowledge that once they finish school, they will be able to get better employment. Thus, stress at work may not occur, as there is little concern about their productivity or the quality of their work.

7.2.1.2 Sexual division of power

Low self efficacy and being controlled by a partner were the only two factors within the sexual division of power that remained in the final model, indicating important factors to low condom use among females, in agreement with past research (Gomez & Marin, 1996; O'Leary et al., 1992) and the predictions of the application of the TGP (Wingood & DiClemente, 2000). Females in this sample with low self efficacy towards practicing safer sex used condoms less frequently. Also, as hypothesized, females who were controlled by their partners have less power in the relationship, thus making it difficult for females to negotiate and persuade their male partners to use condoms during sex.

Condom-use skills and communication were hypothesized to be associated with HIV risk, but were not significant at the bivariate level. Skills related to using condoms may be more relevant among males, considering they are in direct control of physically using condoms. Thus, it may just be important for males to know how to use condoms. Lack of finding a significant association between communication and HIV risk may have been due to the way it was

measured, as communication specifically regarding condom use was not examined and would have been more relevant.

In addition, alcohol and drug abuse were hypothesized to be associated with HIV risk, and only alcohol consumption frequency was significant at the bivariate level, but was dropped from the regression models. However, the current study measured drug and alcohol *use*, not necessarily *abuse*. Thus, future research should include variables that measure the level of alcohol or drug dependence and how much they interfere with daily life functioning. Sexual and physical abuse were also hypothesized to be associated with HIV risk, and physical and verbal abuse were significant only at the bivariate level. However, being controlled by a current partner, which remained in the final model, may have accounted for variance in condom use due to abuse from a partner. Thus, simply being controlled by a partner may be enough to lose decision-making power with regard to using condoms.

Lastly, having a high-risk partner was also hypothesized to be associated with HIV risk, and having a partner who has paid for sex was the only significant variable at the bivariate level. Lack of finding an association between having a high-risk partner may have been due to the subjective nature of this data. Participants were asked, to the best of their knowledge, to provide risk information on behalf of their partners. Clearly, this information would be biased and subjective, and future research should incorporate data collection from sexual dyads in order to gain accurate data on both partners in a relationship.

7.2.1.3 Structure of cathexis

The only factor within the structure of cathexis that remained in the final model was attitudes toward condoms. Past research (Caron et al., 1993; Gomez & Marin, 1996; Sheeran et al., 1999) and the application of the TGP (Wingood & DiClemente, 2000) support the positive

association reported in the current study between attitudes toward condoms and condom use. Thus, females in this sample who held negative attitudes towards condoms used them less often.

Surprisingly, factors related to cultural and gender norms did not remain in the final model, considering the vast amount of research supporting the association between cultural and gender norms and condom use (Caron et al., 1993; Gomez & Marin, 1996). Traditional attitudes towards marriage and the family was the only variable associated with condom-use risk at the bivariate level, but dropped from the regression model due to lack of significance, which may be due to a power issue, considering the small sample size. Future research among Middle Eastern-Canadian females should explore these factors further, among a larger and more heterogeneous sample.

Having a desire to conceive and HIV prevention knowledge were also hypothesized to be associated with HIV risk, and were significant only at the bivariate level. However, males reported more of a desire to conceive than did females, and may explain the lack of finding an association among females. Also, being knowledgeable about HIV and how to prevent HIV may not be relevant in predicting condom use among females, considering that condoms are in the direct control of males. However, this variable not only included questions regarding condom use, but also general HIV knowledge, such as 'most people who carry the HIV virus look and feel healthy'. Thus, this variable may not be completely relevant to condom-use risk, and future research should include general HIV knowledge measures and condom-use knowledge as it relates to HIV, separately. This way, these measures and their associations with condom-use risk can be differentiated.

Lastly, perceived invulnerability to HIV was also hypothesized to be associated with HIV risk, and worry about getting HIV and concern about having had sex with someone who may

have given them HIV were significant at the bivariate level but dropped from the regression analyses. It may be important to differentiate between females who are able to communicate their fears to their partners compared to those who are not able. There may be a difference between females who feel vulnerable to HIV and can communicate these fears to their partners, compared to those who cannot. Thus, a more specific variable must be used in future research.

7.2.2 Determinants of condom-use risk among males

Males who reported less condom use had more than high school education, did not believe they could get their partner to use condoms or did not know if they could, were controlled by their current partners, were current smokers, were Muslims, were not worried about getting HIV, and never or rarely attended religious services.

Most of the variables in the final model were consistent with the application of the TGP (Wingood & DiClemente, 2000); however, some variables contradicted the application of the TGP (education level and religious service attendance). This is not surprising considering the application of the TGP was created to predict female HIV risk.

7.2.2.1 Sexual division of labour

Education level was the only variable from the sexual division of labour that remained in the final model. Contrary to the predictions of the application of the TGP (Wingood & DiClemente, 2000) and the hypotheses in the current study, males with higher than high school education reported less condom use. This is a surprising finding, considering past research has consistently reported the opposite association (Lagarde et al., 2001; Mbizvo et al., 1994). One possible explanation may be that males with higher education may think they know when they are placed at risk for STI/HIV, underestimate these situations, and thus reduce condom-use

frequency. Thus, future research should include a variable measuring perceived risk for HIV by providing participants with scenarios and having them rate these scenarios with regard to risk of getting HIV and if a condom should be used.

Poverty, access to health care, and stress in the workplace were hypothesized to be associated with HIV risk, but were not significant at the bivariate level. Poverty may not be an important factor for HIV risk among males, however, another possibility for the lack of finding an association is that the sample size may have been too small. As previously discussed, access to health care may not have been well measured, and among males, this may be especially significant, as males are less likely to visit their doctors (Sandman, Simantov, & An, 2000). Thus, future research should include questions that measure frequency of visits to doctors. Stress in the workplace, as previously discussed, was only found to be predictive of having more sexual partners. Thus, being stressed at work may affect the frequency of socializing and developing relationships, as opposed to risk behaviour within these relationships. However, it may be important to measure coping strategies for stress among participants, as it may moderate risk behaviour. For example, risk behaviour may be different among males who cope well with stress at work compared to those who do not cope well.

7.2.2.2 Sexual division of power

The majority of the variables in the final model were from the sexual division of power. Males who did not believe they could get their partner to use condoms, or did not know if they could get their partners to use condoms, reported less condom use. Similarly, as hypothesized, males who were controlled by their partners reported less condom use. These associations are consistent with the application of the TGP (Wingood & DiClemente, 2000). This is slightly surprising, considering male condoms are in the direct control of males. It may be that men with

141

low power also have difficulty negotiating condom use with their partners, and these associations should be explored further. As hypothesized, current male smokers also reported less condom use, as predicted by the application of the TGP (Wingood & DiClemente, 2000). This association is not surprising, as high-risk health behaviour tends to go hand in hand, indicating high-risk seekers, which are more likely to be males than females (Arnett, 1994).

Condom-use skill was hypothesized to be associated with HIV risk, but was surprisingly not significant at the bivariate level, considering condoms must be placed on the male before sexual intercourse. Condom-use skill was measured using a question-and-answer design, due to the format of the survey. However, past research has consistently measured this variable using face-to-face activities, asking participants to physically apply a condom on a model of a penis (Ross & Schumacher, 2004; St Lawrence, Wilson, Eldridge, Brasfield, & O'Bannon, 2001), which may be a more reliable measure of skill. Future research can incorporate this method in measuring condom-use skill, or if not possible, can ask participants to go through a step-by-step verbal description of how they use or would use a condom.

In addition, assertive communication and having a high-risk partner were hypothesized to be associated with HIV risk, but were not significant at the bivariate level. The lack of association between communication and condom-use risk is not surprising among this male sample, considering that condoms are physically used by males. That is, males do not have to communicate or be assertive in communicating with their partners about using a condom, as it is already under their control. Similarly, it is not surprising that having a high-risk female partner was not predictive of condom-use risk among males, as males are more likely to engage in high-risk behaviour, compared to females (Bruhin, 2003; Caron et al., 1993; Lary et al., 2004). However, it may be important to conduct future research using dyads, measuring high-risk

142

behaviour among both partners within relationships, and examining the association between each partner's risk behaviour with the other partner's HIV risk.

7.2.2.3 Structure of cathexis

Several variables also came from the structure of cathexis (religious affiliation, attendance of religious services, and worry about getting HIV). Males who affiliated themselves with the Islamic faith reported less condom use, which may be due to the fact that the Islamic faith forbids the use of contraception (Antes, 1989). However, some sects among Christianity also forbid the use of contraception (Schenker & Rabenou, 1993), thus further research should use variables that ask participants to indicate not only their religious affiliation, but also which sect within that religion they affiliate with, as differences may exist with regard to condom use.

Never or rarely attending religious services was also predictive of low condom use, which is against what the application of the TGP predicts (Wingood & DiClemente, 2000). However, past research has reported high religiosity and less risky sexual practices, such as initiating sex at a later age and using condoms (McCree et al., 2003; Thornton & Camburn, 1989; Zaleski & Schiaffino, 2000).

Lastly, as hypothesized, males who were not worried about getting HIV reported less condom use. This association is consistent with the application of the TGP (Wingood & DiClemente, 2000) and past research, where feeling invulnerable to HIV was associated with risky sexual practices (White, Phillips, Mulleady, & Cupitt, 1993).

Having traditional gender and cultural norms was hypothesized to be associated with HIV risk, but was surprisingly not significant at the bivariate level. Past research has reported an association between males holding traditional norms and condom-use risk (Pleck et al., 1993), however, it may be important to measure the partners' level of traditionalism, as it may influence

143

condom-use behaviour among males. In addition, desire to conceive was also hypothesized to be associated with HIV risk, but was not significant at the bivariate level. The lack of finding an association may be due to the limitations in only having one partner's data. Using dyads in future research may help to explore this possible association further, as it would be important to know the level of influence the female partner has on decisions regarding conceiving a child. Alternatively, it may be important to separate the variable into two questions, as the variable within this study asked participants if they *or their partner* desired to conceive in the next 12 months, in order to distinguish between the males' or the females' desires to conceive.

Lastly, HIV prevention knowledge was also hypothesized to be associated with HIV risk, but was not significant at the bivariate level. However, as previously discussed, it may be important to distinguish between condom-use HIV knowledge and general HIV knowledge, such as how the virus is transmitted.

7.2.3 Comparison of determinants of condom-use risk by gender

Clearly, different factors predicted condom-use risk among males and females. Fewer factors were found to be significant for females, compared to males, and yet they had a larger sample size than males, thus more power. It is interesting to note that the male model explained 79% of the variance in the data, compared to 39% in the female model, considering the application of the TGP was created to predict female HIV risk. Possible explanations could be that because condom use is physically under male control, it is a less complex construct to explain among males; while for females, constructs such as communication with partners regarding condom use or rationales for using condoms (e.g., protection against pregnancy may be more persuasive to males, compared to STI/HIV protection) may be more relevant in predicting condom use. Thus, future research should focus more specifically on the interaction

between males and females within a relationship. Broader information regarding participants' partners is crucial in predicting HIV risk. For example, it may not be enough to know how traditional a female is, if we do not know how traditional her partner is. If she reports not being traditional at all, her highly traditional partner may counterbalance her attitudes, considering that condom use, in the end, is under his direct power. Thus, there is a need for dyad studies, in order to explore the effect of one person on the other more directly, rather than using assumptions about partners' risk and behaviour.

In addition, it is evident that one theory cannot predict behaviour for both males and females, and the application of the TGP must be modified by gender. For example, factors such as assertive communication may not be important among males, considering they do not need to negotiate if they want to use condoms. On the other hand, communication is critical among women, as they need to convince their partner to use condoms.

With regard to the hypothesized associations, few differences existed between males and females. However, hypothesized associations were more likely to have been reported among males, such as education and drug use and condom-use risk. However, this is not surprising as condom-use risk is easier to predict among males, considering that condoms are under their control.

Lastly, acculturation was not found to predict condom-use risk among either gender, and was not significant at the bivariate levels. A possible explanation for the lack of association is that acculturation may be more predictive of number of sexual partners, as gender norms encourage sexual experience among males, and not females. Alternatively, considering the vast differences in measuring acculturation in the literature, different acculturation measures may be

more predictive of condom-use risk, such as asking participants if they would willingly adopt new behaviour in the interest of their health, even though it may be against their cultural values.

7.3 Comparison of Determinants among HIV-Risk Measures

7.3.1 Comparison of determinants among females

Lifetime number of sexual partners was associated with more factors compared to condom-use risk among females. The application of the TGP was better at predicting lifetime number of sexual partners among females, compared to condom-use risk. This is not surprising, considering the number of sexual partners a female has is directly under her control, whereas, condom use is under her male partner's control. Thus, it is difficult for a single theory to predict various sexual-risk practices. Clearly, variables that predict HIV risk vary depending on the specific risk behaviour. Thus, future studies should focus on several measures of risky sexual behaviour, in order to capture a broad overview of risk factors. In addition, conducting dyad studies would allow us to obtain crucial information from the females' partners, which would aid in filling in the gaps regarding predictors of condom-use risk. Considering that condom use and sexual behaviour requires both partners' involvement (Noar et al., 2004; Taylor, 1995), data on both is crucial.

Abuse against females was a consistent factor in both HIV-risk variables, and this association has been repeatedly supported in past research (Biglan et al., 1995; Dunkle et al., 2004; Heise et al., 1999; van der Straten et al., 1995; Wu et al., 2003). In addition, while condom use was predicted by mainly internalized factors, such as self efficacy and attitudes, lifetime number of sexual partners was predicted by an array of various factors, both internal and external, including HIV knowledge and partner's characteristics. However, we may not be

getting the full picture without knowing the influences of the male partners on the females' behaviour.

7.3.2 Comparison of determinants among males

Higher educational attainment and having control at work predicted HIV risk among males. As previously discussed, having power within economic and employment situations may increase HIV risk among males. Thus, economic power among males, as discussed in the application of the TGP, may place females at increased risk for HIV, as a greater economic discrepancy may exist between males and females (Wingood & DiClemente, 2000). Thus, females may rely on males for financial resources and may feel like they need to 'obey' their partners, including agreeing to have unprotected sex (Davila, 2000). Clearly, we need to have information on the female partners' economic and employment situations, as a power imbalance may not be present if she also has economic power.

Persuading partners to use condoms was clearly an important factor among males, as it predicted both HIV risk variables. Males who did not believe they could get their partners to use condoms or did not know if they could get their partner to use condoms reported less condom use, while males who were already using condoms with their partners or believed they could get their partners to use condoms, reported more sexual partners. Thus, perceived control over condom use is crucial in predicting HIV risk among males, and this is not surprising considering that condoms are directly under their control

In addition, drug use was consistent in predicting both HIV risk factors, and is consistent with sensation-seeking among males. Thus, it may be important to examine sensation-seeking in general among males, and its association with HIV risk.

7.4 Application of the Theory of Gender and Power

The application of the TGP proved to be moderately successful in predicting the number of sexual partners among females and condom-use risk among males, however, was not as successful in predicting the number of sexual partners among males and condom-use risk among females. Also, several risk factors that were found to be associated with sexual risk behaviour contradicted the application of the TGP, such as employment and number of sexual partners among females. It is not surprising that the application of the TGP was not highly successful in predicting sexual risk among males, as it was originally applied only to females (Wingood & DiClemente, 2000). In addition, the theory was originally applied to African American females (Wingood & DiClemente, 2000), and power issues between males and female among this ethnic group may be quite different from issues among Middle Easterners.

7.5 Strengths & Limitations

There are several strengths to the study:

1. Having a community advisory board of both genders gained study approval from members of the Middle Eastern-Canadian community and ensured that the questions were culturally appropriate.

2. Using a web-based survey design allowed respondents to maintain privacy and comfort in answering sensitive questions on their own time, at their desired location, and may have decreased social acceptability bias.

3. This was the first study to test the application of the TGP (Wingood & DiClemente, 2000) among Middle Eastern-Canadians, in addition to testing it among both males and females.

4. We focused on many associations between gender- and culturally-based factors and HIV risk, all in one comprehensive study.

5. We extended the application of the TGP (Wingood & DiClemente, 2000) to include the acculturation variable, which we feel is an important factor associated with HIV risk.

However, there are also several limitations to the study:

1. Generalizability to Middle Eastern-Canadian individuals who lack computer and internet skills and/or who are highly conservative and religious is not possible, due to the fact that the survey was online and recruitment through religious groups was not possible.

2. Due to the cross-sectional design of the proposed study, identifying causal relationships is not possible (Gordis, 2004).

3. Item non-response may have occurred due to lack of understanding a question, unwillingness to answer, or technical difficulties (Braithwaite, Emery, De Lusignan, & Sutton, 2003). However, item non-response was quite low in this study.

4. Sample bias may have occurred in the study for a couple of reasons: first, the study's sample was limited to individuals with access and skills to use a computer and the internet. Second, the private nature of the questions in the survey may have reduced participation from highly conservative and religious eligible individuals, and potentially under-representing individuals with decreased relationship power. Thus, generalizing the study's results to the Middle Eastern population should be done with care, taking the above factors into consideration.

5. Abuse among this sample may be underrepresented, as two variables (threatened by partner and forced sex) were significantly associated with socially desirable answers.

6. Stress in the workplace may not be an accurate representation among this sample, as nine participants missed more than two questions within the scale, thus were removed from analyses. Participants may have been confused as to whether they should have filled this scale or not, and skip patterns within the survey software, if they had been available, would have prevented this. In addition, participants who were in school and/or not working were not able to complete this scale, as the application of the TGP (Wingood & DiClemente, 2000) does not take these participants into account.

7. The study had a small sample size, and low power may have been an issue. Initially, we calculated that we needed 300 participants in order to reach power of .8. However, due to the fact that the ethics committee board felt this study was a pilot-test of the online and recruitment methods, we were forced to reduce the maximum sample size to 200. In addition, due to the delay in ethical approval, recruitment time was considerably shortened.

8. Due to the small sample size, significant associations may have been missed due to insufficient power. For the same reason, it was not possible to control for all demographic variables that were found to be significantly different among males and females, such as age when first moved to Canada.

9. As previously described, the dependent variable 'condom use the last time they had sex' was removed from analyses. However, this variable would have provided better recall data concerning condom use among this sample.

7.6 Practical Implications

Despite low HIV rates among Middle Eastern-Canadians, 72.55% of the sexually active individuals in the sample did not consistently use condoms when they had sex. Clearly, effective

strategies to target this population are crucial, in order to reduce risky sexual behaviour, and in turn prevent a rise in STI/HIV rates. The need for female-controlled barrier methods is crucial, specifically microbicides, as females in this sample did not seem to have control over condom use, yet many still had more than one partner. In addition, females had negative attitudes towards condom use, thus female-controlled barrier methods would offer females other safer-sex options.

Considering that self efficacy towards practicing safer sex was one of the few correlates of condom-use risk among females, strategies focusing on increasing self efficacy in using condoms, such as skill building and role playing, among females are also important. Strategies that teach women to prepare for different responses to condom use from their male partners will allow them to respond effectively and successfully. It is not sufficient to teach women how to use condoms and increase their abilities, as condom use involves two people. Strategies focusing on males are also needed. Interventions focusing on males that attempt to break down traditional stereotypes about gender norms may help to decrease HIV risk among both genders.

In addition, low perceived risk of getting HIV and low condom use among males is concerning. Almost three percent of total positive HIV test in Canada between 1998 and June 2006 were accounted for by Middle Easterners[26] (PHAC, 2006b). In addition, HIV incident cases have increased over the past few years in North Africa and the Middle East (UNAIDS, 2006; UNAIDS/WHO, 2006b). Interventions designed to demonstrate the realities of HIV risk and vulnerabilities among Middle Eastern-Canadian males are crucial. These interventions will also help to break the 'culture of silence' surrounding STI/HIV among Middle Eastern-Canadians.

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[26] Category included South Asians, West Asians, and Arabs

7.7 Implications for Future Research

The current research study served to test the application of the TGP (Wingood & DiClemente, 2000) among Middle Eastern-Canadians and across both genders, and thus provided useful, but preliminary, information regarding factors associated with HIV risk. Research focusing on both males and females within a relationship would serve to fill many gaps regarding HIV risk. Studies using dyads would allow researchers to explore both sides of safer-sex interactions, and would provide a complete picture of HIV risk. For example, dyad studies would allow us to examine the influence males have on females with regard to condom use. In addition, it would allow us to examine the influence females have on their partners' use of condoms if they hold power within the relationship.

Several variables that were found to be associated with risk behaviour, such as education, smoking, and control at work, need to be explored further, due to the fact that they are likely confounders or proxies for other variables that still need to be identified. Thus, future research must attempt to tease out the underlying factors involved in these associations. For example, smoking was found to be associated with condom-use risk, and as previously discussed, high-risk behaviour tend to go hand in hand. However, the underlying cause of risk behaviour in general would be an important factor to explore with regard to HIV risk.

Also, the application of the TGP clearly needs to be altered for this ethnic group. Many variables were not found to be predictive of HIV risk; however, this may be due to sample size limitations and lack of heterogeneity among the sample. Thus, future work should be conducted among a larger sample and should include other cultural groups. HIV-risk constructs (i.e., condom use, number of sexual partners) are also important to clarify within the application of the TGP, as different predictors from the application of the TGP will predict different HIV risk

constructs. Thus, one application of the TGP may not be sufficient in predicting all risky sexual practices.

Regarding statistical analyses, future analyses dealing with large amount of zeros in count data (such as the dependent variable 'number of lifetime sexual partners'), should use a Zero-Inflated Poisson (ZIP) model to deal with this kind of data. We corrected for overdispersion in the Poisson regression models by applying a scaling factor; however, this does not completely deal with a large amount of zeros in the data.

Lastly, the organization of constructs within the application of the TGP should be rearranged, as some constructs seem to belong under different structures in the TGP. For example, HIV prevention knowledge is currently categorized under the structure of cathexis, but would make more sense under the sexual division of power, considering that other skills are already categorized under this structure (i.e., condom-use skills, access to HIV prevention education) and that knowledge provides individuals with power to make their own decisions.

8. CONCLUSIONS

This is thought to be the first study to apply Wingood and DiClemente's (2000) application of the TGP among Middle Eastern-Canadians, and was the first to apply it among males. HIV risk was clearly present among this sample, and prevention among Middle Eastern-Canadians through safer sexual practices should be a primary focus in the fight against STI/HIV. The current study has provided a starting point in examining HIV-risk behaviour among Middle Eastern-Canadians, and future research should continue this exploration.

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10. APPENDICES
APPENDIX A: Mail survey procedure and documents

Individuals attending religious groups were to be given the option to complete the survey online or use a paper format. Paper surveys with pre-paid and addressed envelopes were to be supplied to participants in the religious groups that chose this arrangement. They would also have been supplied with a pre-paid and addressed mail card where they could include their email or mailing address in order to enter the draw (Bullock, 2004; Mangione, 1995) and would have had the option of indicating on their mail cards if they would like to receive the study results via mail. These mail cards would have been mailed separately from the surveys. In addition, consent would have been given by the participant if they chose to return the survey. Please refer to the next four pages for mail survey documents.

Sample postcard for prize draw for pencil and paper mail surveys

Card front

No return address needed
 	
                                                                   **Postage stamp will
be affixed here**
 	
        **To: Dr. Sandra Bullock, Principal Investigator
      Dept. of Health Studies & Gerontology
      University of Waterloo
      200 University Ave. W.
      Waterloo, ON
      N2L 3G1**

Card back

This is to let you know that I have returned my survey <u>separately</u> in another envelope. I am aware that my answers to the survey will be anonymous because there is no name or identification on the survey.
 	
☐ **Please enter me in the prize draw for a 1 in 15 chance of winning a $25 Amazon.ca gift certificate**
☐ **Please send me a copy of the study results in the summer of 2007**
 	
      Email address: _____
                       OR
          Name: _____
  Regular mailing address: _____
                         _____
                         _____
                         _____
                         _____

Eligibility questionnaire for mail-back participants

University of
Waterloo

Study Eligibility Questions

The following 5 questions address personal information. Without answers to these questions we will not be able to make decisions about your eligibility for this study. Remember, your involvement is confidential and answers are anonymous.

1) Are you of Middle Eastern/Arabic descent?
   ☐$_1$ Yes
   ☐$_0$ No → We are sorry, you are not eligible for this study, it focuses only on Middle Eastern and/or Arab Canadians. Thank you for your interest.

2) What is your current age?

   |__|__| → If you are younger than 18 or older than 35, we are sorry, you are not eligible for this study, it focuses only on 18 to 35 year olds. Thank you for your interest.

3) Are you currently in a relationship, or dating someone for 21 days or longer?
   ☐$_1$ Yes
   ☐$_0$ No → We are sorry, you are not eligible for this study, it focuses only on people who are currently in a relationship or dating for 21 days or longer. Thank you for your interest.

4) What is your sexual identity?
   ☐$_1$ Heterosexual
   ☐$_2$ Bisexual → We are sorry, your are not eligible for this study,
   ☐$_3$ Homosexual → it focuses only on people who self-identify as heterosexual.
   ☐$_4$ Don't know → Thank you for your interest.

5) Do you currently live in Canada?
   ☐$_1$ Yes
   ☐$_0$ No → We are sorry, you are not eligible for this study, it focuses only on people who currently live in Canada. Thank you for your interest.

Consent for participation for mail-back survey participants

University of
Waterloo   **Relationships and Experiences among Middle Eastern and/or Arab Canadians**

Thank you for your interest in this survey. You are being invited to participate in a research study intending to apply the Theory of Gender and Power to understand relationships and experiences among Middle Eastern and/or Arab Canadian males and females. The study is based in the Department of Health Studies and Gerontology at the University of Waterloo. This research is especially important in attempting to identify risk factors for HIV in this broad ethnic group. Participation in this study will allow researchers to gain crucial information in regards to equality between partners in relationships among Middle Eastern and/or Arab Canadians and its association with HIV risk.

Participation in this study is completely voluntary, involvement is confidential and all answers are anonymous. You will NOT be asked to leave your name or any other identifying information within the survey. If you do choose to participate, you will be invited to complete a survey and mail it back using the attached pre-paid envelope. You do NOT need to include a return address.

The survey includes personal questions regarding various aspects of your life, such as alcohol use, work stress, sexual behaviour, and involvement with high-risk partners. For example, you will be asked about the number of sexual partners you and your current partner have had in the past. You do NOT need to be sexually active to be eligible to participate. If you find that you are uncomfortable answering some questions, please be assured that this discomfort is expected to be short lived and that answers are anonymous, and you can NOT be contacted regarding your answers. Should participation in this study, or reading or reflecting on any of its questions, raise any personal issues for you that you would like to discuss with a professional, telephone numbers and information regarding support resources offered by the Canadian Centre on Substance Abuse, the Canadian Mental Health Association, the Public Health Agency of Canada, and Health Canada is available at the end of the survey if you should require them. In addition, you also can contact the Project Coordinator or the Principal Investigator via the contact information listed at the end of this form.

While completing this survey, please ensure that it is kept in a safe place in order to ensure privacy. Once your survey is received by the researchers, the data will be entered and stored on a password-protected computer by the Project Coordinator.

In order to be able to participate in the study, you must fit the following criteria. You should be:
- of Middle Eastern and/or Arabic descent,
- currently in a relationship or dating for more than 21 days (3 weeks),
- between 18 and 35 years of age,
- heterosexual,
- able to comprehend, read, and write English, and
- living in Canada

The survey will take approximately 22 minutes of your time. Please answer as accurately and truthfully as possible. You have the option of skipping/not answering any questions. Also, you may withdraw from the survey at any time by not mailing your answers back to the study office.

Prize draw: You will also have the chance to enter a draw to win a $25 online gift certificate to Amazon.ca. The odds of winning are 1/15. Entering the draw is optional. If you choose to enter the draw, please complete and return the stamped, addressed mail card. Do NOT place it in the envelope with your survey. Each has enough postage to be returned individually. This way, we cannot discover how you answered your survey. If you provide us with your email address, once the draw has taken place, all winners will be contacted via email with an attachment on how to use their electronic gift certificate. If you provide us with your name and regular mail address we will mail the gift certificate to you. Names and addresses will not be shared with others and it is NOT possible for us to link your name, address, or email address to your survey answers.

Reporting results: Study results will be posted on the http://www.redwhitegreen.com/ website in the summer of 2007. If you indicated on the mail card that you would like to receive a mailed copy of the study results, it will be sent to you at that time. Results and scientific papers will refer to grouped data, NOT individual data. That is, trends will be reported but people will not be able to identify you in any way.

All names and addresses will be permanently deleted once the draw and mailing of the results are complete.

If you have any questions regarding the study, please contact:

Project Coordinator: University of Waterloo, Health Studies & Gerontology, relationships@ahsmail.uwaterloo.ca

Principal Investigator: Dr. Sandra L. Bullock, PhD., University of Waterloo, Health Studies & Gerontology, sbullock@uwaterloo.ca, (519) 888-4567 Ext. 32378

The study has been reviewed and received ethics clearance through the Office of Research Ethics (ORE) at the University of Waterloo. If you have comments or concerns resulting from your involvement in this study, you may contact Dr. Susan Sykes, Director, ORE. The telephone number for ORE is (519) 888-4567, Ext. 36005, the email is ssykes@uwaterloo.ca.

Statement of consent: By sending in the survey, I am agreeing to participate in the study 'Relationships and Experiences among Middle Eastern and/or Arab Canadians'. I have read and understand the above information given. I understand that participation in the study and the draw is voluntary, that I can withdraw at any time, and that my involvement is confidential and all my answers are anonymous.

Thank you letter for mail-back survey participants

Project Coordinator: University of Waterloo, Health Studies and Gerontology, relationships@ahsmail.uwaterloo.ca
Principal Investigator: Dr. Sandra L. Bullock, PhD., University of Waterloo, Health Studies and Gerontology, sbullock@healthy.uwaterloo.ca, (519) 888-4567 ext. 32378

Thank you for participating in the study! This research is important in attempting to identify risk factors for HIV among Middle Eastern and/or Arab Canadians. Participation in this study allows researchers to gain crucial information in regards to HIV prevention among this ethnic group. We would like to remind you that your involvement is confidential, your answers are anonymous, and that you cannot be identified to your answers. Once your survey is received by the researcher, the data will be entered and stored on a password-protected computer by the Project Coordinator.

The attached page provides a number of resources that you can access for information or assistance regarding substance use, mental health, family violence, and HIV/AIDS. If you have any further questions or need assistance to find additional resources, please contact the Project Coordinator or the Principal Investigator as indicate above.

Study results will be posted on the http://www.redwhitegreen.com/ website in the summer of 2007. If you indicated on the mail card that you would like to receive a mailed copy of the study results, it will be sent to you at that time. Results and scientific papers will refer to grouped data, NOT individual data. That is, trends will be reported but people will not be able to identify you in any way.

If you know anyone who would be interested in participating in this survey, please pass on our email address, relationships@ahsmail.uwaterloo.ca, or the survey link.

You now have the option in entering the draw to win a $25 online gift certificate to Amazon.ca. You will have 1 in 15 chance of winning. By agreeing to enter the draw, you are also agreeing to Amazon.ca's regulations for the use of their online gift certificates.

If you choose to enter the draw, please complete and return the stamped, addressed mail card. Do NOT place it in the envelope with your survey. Each has enough postage to be returned individually. This way, we cannot discover how you answered your survey. If you provide us with your email address, once the draw has taken place, all winners will be contacted via email with an attachment on how to use their electronic gift certificate. If you provide us with your name and regular mail address we will mail the gift certificate to you. Names and addresses will not be shared with others and it is NOT possible for us to link your name, address, or email address to your survey answers.

Please keep this page for your reference.

Thank you once again for your participation and your time!

The study has been reviewed and received ethics clearance through the Office of Research Ethics (ORE) at the University of Waterloo. If you have comments or concerns resulting from your involvement in this study, you may contact Dr. Susan Sykes, Director, ORE. The telephone number for ORE is (519) 888-4567, Ext. 36005, the email is ssykes@uwaterloo.ca.

Resource List

The following resources are available to you if you require further information, advice, or help/support on the issues raised in this survey:

The Canadian Centre on Substance Abuse (CCSA)—the following link will direct you to a database where you can search for substance abuse information and treatment services close to where you reside.
http://www.ccsa.ca/CCSA/EN/Addiction_Databases/TreatmentServicesForm.htm

Drug and Alcohol Registry of Treatment (DART)—the following telephone number serves individuals that need immediate assistance and/or treatment information regarding drug and/or alcohol abuse. Toll-free and open 24 hours a day.
1-800-565-8603

The Canadian Mental Health Association (CMHA)—the following link will direct you to a database where you can search for a CMHA location close to where you reside, which offers information and support to people about mental health issues.
http://www.cmha.ca/bins/loc_page.asp?cid=58-85&lang=1

Mental Health Service Information Ontario—the following telephone number serves individuals who are looking for mental health information, programs, or services. Toll-free and open 24 hours a day.
1-866-531-2600

The Public Health Agency of Canada (regarding violence)—the following link will direct you to the contact information for the National Clearinghouse on Family Violence for information and resources on family violence.
 http://www.phac-aspc.gc.ca/ncfv-cnivf/familyviolence/refer_e.html
Telephone number for the National Clearinghouse on Family Violence: 1-800-267-1291

Health Canada (HIV and AIDS information)— the following link will direct you to information regarding HIV and AIDS, including services geared to individuals living with, or affected by, HIV.
 http://www.hc-sc.gc.ca/dc-ma/aids-sida/index_e.html

Canadian AIDS Treatment Information Exchange (CATIE)—the following telephone number serves individuals living with HIV who are looking for HIV treatment information, HIV resources such as testing clinics, or support. Staff is available Monday, Tuesday, and Thursday, 10am-6pm (ET) and Wednesday 1pm-9pm (ET). Toll-free.
1-800-263-1638

APPENDIX B: Recruitment poster for Middle Eastern and/or Arab organizations

University of
Waterloo

University of
Waterloo

Department of Health Studies & Gerontology
MIDDLE EASTERN AND/OR ARAB PARTICIPANTS NEEDED FOR
RESEARCH IN RELATIONSHIP EXPERIENCES

We are looking for volunteers to take part in a study of
relationships and experiences, including sexual behaviour,
among Middle Eastern and/or Arab Canadians

o As a participant in this study, you would be asked to complete an online
   survey—about 22 minutes of your time
o Involvement is confidential and responses are anonymous
o If you are of either Middle Eastern or Arabic descent, heterosexual, currently in
   a relationship or dating for more than 21 days (you do not need to be sexually
   active), between 18-35 years of age, able to read and write in English, and
   living in Canada, you are eligible to participate
o You will have the option of entering a draw for a 1 in 15 chance to win a
   $25 online gift certificate to Amazon.ca

For more information about this study, or to volunteer for this study,
please contact:
Project Coordinator
Email: relationships@ahsmail.uwaterloo.ca

This study has been reviewed by, and received ethics clearance
through, the Office of Research Ethics, University of Waterloo.

Info: relationships @uwaterloo.ca Survey: http://www.redwhitegreen.com/

Info: relationships @uwaterloo.ca Survey: http://www.redwhitegreen.com/

Info: relationships @uwaterloo.ca Survey: http://www.redwhitegreen.com/

Info: relationships @uwaterloo.ca Survey: http://www.redwhitegreen.com/

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Info: relationships @uwaterloo.ca Survey: http://www.redwhitegreen.com/

Locations where recruitment poster was displayed:

1) Haddad Bakery, Toronto, Ontario
2) Tyros Restaurant, Ottawa, Ontario
3) Shawarma Palace Restaurant, Ottawa, Ontario
4) Hairmosa Salon, Ottawa, Ontario
5) Cedar Valley Restaurant, Ottawa, Ontario

APPENDIX C: Middle Eastern and/or Arab newspaper recruitment advertisement

University of
Waterloo

Dept of Health Studies & Gerontology
MIDDLE EASTERN AND/OR ARAB
PARTICIPANTS NEEDED FOR
RESEARCH IN RELATIONSHIP EXPERIENCES
We are looking for volunteers to take part in a study of relationships
and experiences, including sexual behaviour, by completing an
online survey—about 22 minutes of your time. Involvement is
confidential and responses are anonymous. If you are of either
Middle Eastern or Arabic descent, heterosexual, currently in a
relationship or dating for more than 21 days (you do not need to be
sexually active), between 18-35 years of age, able to read and write
in English, and living in Canada, you are eligible to participate. You
will have the option of entering a draw for a 1 in 15 chance to win a
$25 online gift certificate to Amazon.ca.
For more information, or to volunteer for this study, please contact:
Project Coordinator
Email: relationships@ahsmail.uwaterloo.ca
Survey: http://www.redwhitegreen.com/
This study has been reviewed by, and received ethics clearance
through, the Office of Research Ethics, University of Waterloo.

Locations where newspaper advertisement was published:

1) www.arab2000.net
2) Arab 2000 newspaper

Study Eligibility Questions

The following 5 questions address personal information. Without answers to these questions we will not be able to make decisions about your eligibility for this study. Remember, your involvement is confidential and answers are anonymous.

1) Are you of Middle Eastern/Arabic descent?
   $\Box_1$ Yes
   $\Box_0$ No *

2) What is your current age?

   |__|__|

3) Are you currently in a relationship, or dating someone for 21 days or longer?
   $\Box_1$ Yes
   $\Box_0$ No *

4) What is your sexual identity?
   $\Box_1$ Heterosexual
   $\Box_2$ Bisexual *
   $\Box_3$ Homosexual *
   $\Box_4$ Don't know *

5) Do you currently live in Canada?
   $\Box_1$ Yes
   $\Box_0$ No *

[Submit]

Note to Reviewers
If the person is younger than 18 or older than 35; or indicates any answer marked with an asterisk, a message will pop up indicating that they are not eligible for the study and why, and also thanking them for their interest in the study. For example, if they answer 'No' to question 1, they will see, "We're sorry, you are not eligible for this study, it focuses only on Middle Eastern and/or Arab Canadians. Thank you for your interest".

APPENDIX E: Survey

University of
Waterloo

**Please note that the term 'Middle Eastern/Arab' represents Middle Easterns and/or Arab

A. DEMOGRAPHICS

1) Where did you hear about this survey?
   ☐$_1$ Red White Green website
   ☐$_2$ Saw a poster in a Middle Eastern/Arab organization
   ☐$_3$ Middle Eastern/Arab organization or club
   ☐$_4$ Friend/family member
   ☐$_5$ Newspaper advertisement
   ☐$_6$ Religious group
   ☐$_7$ Other _____

2) Are you:
   ☐$_1$ Female
   ☐$_2$ Male

3) What is your family's country of origin? List more than 1 if necessary.
   _____

4) Where were you born?
   ☐$_1$ Canada → go to question 7
   ☐$_2$ Other _____

5) If born elsewhere, how old were you when you first came to live in Canada?
   |__|__|

6) What is your current immigration status?
   ☐$_1$ Canadian citizen
   ☐$_2$ Landed/permanent resident
   ☐$_3$ Refugee/protected person
   ☐$_4$ Refugee claimant/person in need of protection
   ☐$_5$ Temporary work papers
   ☐$_6$ Visitor
   ☐$_7$ Student visa
   ☐$_8$ No status/none of the above
   ☐$_9$ Don't know

7) Where do you currently live?
- $\square_1$ Toronto or the Greater Toronto Area (GTA)
- $\square_2$ Montreal
- $\square_3$ Vancouver
- $\square_4$ Waterloo
- $\square_5$ Other_____

8) How many people currently live in your home, including you?

_____

9) How many dependents (e.g., children, parents, grandparents) live in your household and are under your care?

_____

10) Who did you live with the most often while growing up?
- $\square_1$ Mother
- $\square_2$ Father
- $\square_3$ Both parents
- $\square_4$ Mother and stepfather
- $\square_5$ Father and stepmother
- $\square_6$ Grandmother and/or grandfather
- $\square_7$ Aunt and/or uncle
- $\square_8$ Other_____

11) Do you currently live with your parent(s)?
- $\square_1$ Yes
- $\square_0$ No

12) What is the highest level of education completed by your mother?
- $\square_0$ None
- $\square_1$ Elementary or junior high
- $\square_2$ High school
- $\square_3$ General educational development (GED)
- $\square_4$ Technical/vocational school beyond high school
- $\square_5$ CEGEP
- $\square_6$ College/university
- $\square_7$ Masters
- $\square_8$ Professional school licensed, such as dentistry, medical school, or law school
- $\square_9$ PhD

13) What is the highest level of education completed by your father?
- $\square_0$ None
- $\square_1$ Elementary or junior high
- $\square_2$ High school
- $\square_3$ General educational development (GED)
- $\square_4$ Technical/vocational school beyond high school
- $\square_5$ CEGEP
- $\square_6$ College/university
- $\square_7$ Masters
- $\square_8$ Professional school licensed, such as dentistry, medical school, or law school
- $\square_9$ PhD

14) What was the highest grade or level of formal education that you have completed?
- $\square_0$ None
- $\square_1$ Elementary or junior high
- $\square_2$ High school
- $\square_3$ General educational development (GED)
- $\square_4$ Technical/vocational school beyond high school
- $\square_5$ CEGEP
- $\square_6$ College/university
- $\square_7$ Masters
- $\square_8$ Professional school licensed, such as dentistry, medical school, or law school
- $\square_9$ PhD

15) What is your current marital status?
- $\square_1$ Single – not engaged
- $\square_2$ Single – engaged
- $\square_3$ Married/common law
- $\square_4$ Separated
- $\square_5$ Divorced
- $\square_6$ Widowed

16) How long have you been with your current partner, in MONTHS? When referring to your current partner, we mean the person that you are in a relationship with or dating most predominantly (if 3 weeks, insert .75).
_____ months

17) Which of the following best describes your current relationship/dating status?
- ☐₁ Casual – dating, not exclusive
- ☐₂ Non-exclusive – see other people, some level of commitment
- ☐₃ Exclusive – see only this person, no commitment
- ☐₄ Exclusive – see only this person, some commitment
- ☐₅ Committed – sincere attachment to this person

18) What is your partner's country of origin, or his/her family's country of origin? List more than 1 if necessary.

   _____

19) What is your partner's current age?

   |__|__|

The following questions refer to your employment.

20) Please indicate which of these statements best describes your present WORK situation. CHECK ALL THAT APPLY.
- ☐₁ Working full time, that is 30 hours or more a week
- ☐₂ Working part time, or less than 30 hours a week
- ☐₃ Have a job, but do not work because of temporary illness
- ☐₄ Unemployed or laid off and looking for work
- ☐₅ Unemployed or laid off and not looking for work
- ☐₆ In school
- ☐₇ Keeping house
- ☐₈ Retired
- ☐₉ Disabled
- ☐₁₀ Do not work for pay
- ☐₁₁ Other_____

21) Thinking about your personal income in 2006, what was YOUR MAIN SOURCE of income?
- ☐₁ Wages and salaries
- ☐₂ Income from self employment
- ☐₃ Worker's compensation
- ☐₄ Government or insurance programs (family allowance, disability, unemployment insurance, general welfare)
- ☐₅ Scholarships, student loans or bursaries
- ☐₆ Investments (dividends on bonds, deposits and savings)
- ☐₇ Supported by parent, spouse, ex-spouse, or other relative
- ☐₈ No legal income
- ☐₉ Other_____

22) Into which group did your total PERSONAL gross income from all sources in 2006 fall before taxes were deducted?

- ☐$_0$ No income
- ☐$_1$ Less than \$6,000
- ☐$_2$ \$6,000 to \$11,999
- ☐$_3$ \$12,000 to \$19,999
- ☐$_4$ \$20,000 to \$29,999
- ☐$_5$ \$30,000 to \$39,999
- ☐$_6$ \$40,000 to \$49,999
- ☐$_7$ \$50,000 to \$59,999
- ☐$_8$ \$60,000 to \$69,999
- ☐$_9$ \$70,000 to \$79,999
- ☐$_{10}$ \$80,000 to \$89,999
- ☐$_{11}$ \$90,000 to \$99,999
- ☐$_{12}$ \$100,000 or more

23) If you are currently living with your parent(s) or are being supported by them, into which group do(es) YOUR PARENT(S)' gross income from all sources in 2006 fall before taxes were deducted?

- ☐$_0$ No income
- ☐$_1$ Less than \$6,000
- ☐$_2$ \$6,000 to \$11,999
- ☐$_3$ \$12,000 to \$19,999
- ☐$_4$ \$20,000 to \$29,999
- ☐$_5$ \$30,000 to \$39,999
- ☐$_6$ \$40,000 to \$49,999
- ☐$_7$ \$50,000 to \$59,999
- ☐$_8$ \$60,000 to \$69,999
- ☐$_9$ \$70,000 to \$79,999
- ☐$_{10}$ \$80,000 to \$89,999
- ☐$_{11}$ \$90,000 to \$99,999
- ☐$_{12}$ \$100,000 or more
- ☐$_{13}$ Don't know

24) Into which group did your total HOUSEHOLD gross income from all sources in 2006 fall before taxes were deducted? Include all individuals who earned an income in your household (e.g., partner, mother, father, brother, sister, etc.), estimating where necessary.

☐$_0$ No income
☐$_1$ Less than $6,000
☐$_2$ $6,000   to $11,999
☐$_3$ $12,000 to $19,999
☐$_4$ $20,000 to $29,999
☐$_5$ $30,000 to $49,999
☐$_6$ $50,000 to $69,999
☐$_7$ $70,000 to $89,999
☐$_8$ $90,000 to $109,999
☐$_9$ $110,000 to $129,999
☐$_{10}$ $130,000 to $149,999
☐$_{11}$ $150,000 or more
☐$_{12}$ Don't know

25) If you work full time, part time, or are temporarily away from your job or keeping house, please answer the following questions regarding work. Otherwise, go to the next question.

	Frequently ⟵⟶			Never/Almost never
a. Does your job require you to work very fast?	☐$_4$	☐$_3$	☐$_2$	☐$_1$
b. Does your job require you to work very hard?	☐$_4$	☐$_3$	☐$_2$	☐$_1$
c. Does your job require too great a work effort?	☐$_4$	☐$_3$	☐$_2$	☐$_1$
d. Do you have sufficient time for all your work tasks?	☐$_4$	☐$_3$	☐$_2$	☐$_1$
e. Do conflicting demands often occur in your work?	☐$_4$	☐$_3$	☐$_2$	☐$_1$
f. Do you have the opportunity to learn new things in your work?	☐$_4$	☐$_3$	☐$_2$	☐$_1$
g. Does your job require creativity?	☐$_4$	☐$_3$	☐$_2$	☐$_1$
h. Does your job require doing the same tasks over and over again?	☐$_4$	☐$_3$	☐$_2$	☐$_1$
i. Do you have the possibility to decide for yourself how to carry out your work?	☐$_4$	☐$_3$	☐$_2$	☐$_1$
j. Do you have the possibility to decide for yourself what should be done in your work?	☐$_4$	☐$_3$	☐$_2$	☐$_1$

26) Do you feel that you are overqualified for your current job?
☐$_1$ Yes
☐$_0$ No

B. CULTURE AND TRADITIONS

27) Below are a number of statements about Middle Eastern/Arab culture. Please indicate how frequently each applies to you.

	Always	Frequently	Occasionally	Rarely	Never
a. I eat Middle Eastern/Arab food	☐4	☐3	☐2	☐1	☐0
b. I celebrate major Canadian holidays (e.g., Canada day, Thanksgiving day)	☐4	☐3	☐2	☐1	☐0
c. I invite non-Middle Easterners/Arabs to my home	☐4	☐3	☐2	☐1	☐0
d. I make new non-Middle Eastern/Arab friends	☐4	☐3	☐2	☐1	☐0
e. I watch Middle Eastern/Arab TV	☐4	☐3	☐2	☐1	☐0
f. I read a(n) Middle Eastern/Arab newspaper (paper copy and/or online)	☐4	☐3	☐2	☐1	☐0
g. I identify myself as Middle Eastern/Arab first and Canadian second	☐4	☐3	☐2	☐1	☐0
h. I think in my Middle Eastern/Arab language of origin	☐4	☐3	☐2	☐1	☐0
i. I find myself wishing I lived in a Middle Eastern/Arab country	☐4	☐3	☐2	☐1	☐0
j. I feel more comfortable around non-Middle Eastern/Arab Canadians than I do around Middle Eastern/Arab Canadians	☐4	☐3	☐2	☐1	☐0
k. I speak my Middle Eastern/Arab language of origin at home	☐4	☐3	☐2	☐1	☐0
l. I speak my Middle Eastern/Arab language of origin with my friends	☐4	☐3	☐2	☐1	☐0

28) What is your religious preference?

☐1 Buddhist

☐2 Christian

☐3 Jewish

☐4 Hindu

☐5 Muslim

☐6 Atheist

☐7 No religious preference/agnostic

☐8 Other_____

29) About how often do you attend religious services?
- $\square_5$ Once a week, or more
- $\square_4$ Two or three times a month
- $\square_3$ Once a month
- $\square_2$ A few times during the year
- $\square_1$ Rarely
- $\square_0$ Never

30) How important is organized religion in your life?
- $\square_4$ Very important
- $\square_3$ Somewhat important
- $\square_2$ Not really important
- $\square_1$ Not important at all

31) How important is spirituality in your life?
- $\square_4$ Very important
- $\square_3$ Somewhat important
- $\square_2$ Not really important
- $\square_1$ Not important at all

C. ATTITUDES/BELIEFS

32) Listed below are a number of statements concerning personal attitudes. Read each item and decide whether the statement is true or false as it applies to you.

	True	False
a. I never hesitate to go out of my way to help someone in trouble.	$\square_1$	$\square_0$
b. I have never intensely disliked anyone.	$\square_1$	$\square_0$
c. There have been times when I was quite jealous of the good fortune of others.	$\square_1$	$\square_0$
d. I would never think of letting someone else be punished for my wrong doings.	$\square_1$	$\square_0$
e. I sometimes feel resentful when I don't get my way.	$\square_1$	$\square_0$
f. There have been times when I felt like rebelling against people in authority even though I knew they were right.	$\square_1$	$\square_0$
g. I am always courteous, even to people who are disagreeable.	$\square_1$	$\square_0$
h. When I don't know something I don't at all mind admitting it.	$\square_1$	$\square_0$
i. I can remember "playing sick" to get out of something.	$\square_1$	$\square_0$
j. I am sometimes irritated by people who ask favors of me.	$\square_1$	$\square_0$

33) Below are a number of statements about attitudes towards MEN'S AND WOMEN'S ROLES. Please indicate how strongly you agree or disagree with each statement.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a. A women and not her man should do the cooking and house cleaning	☐5	☐4	☐3	☐2	☐1
b. A woman needs to have a man in her life	☐5	☐4	☐3	☐2	☐1
c. A woman should confront her partner if she finds out he is having an affair	☐5	☐4	☐3	☐2	☐1
d. Men's opinions are more important than women's in making important decisions in a relationship	☐5	☐4	☐3	☐2	☐1
e. A man's happiness is more important than a woman's in a relationship	☐5	☐4	☐3	☐2	☐1
f. If a man and a woman are arguing, it is important for her to 'give in' so they will stop arguing	☐5	☐4	☐3	☐2	☐1
g. Women don't need to have sex as much as men do	☐5	☐4	☐3	☐2	☐1
h. If a man wants to have sex and a woman doesn't, she should have sex to please him	☐5	☐4	☐3	☐2	☐1

34) The following statements are about attitudes towards MEN'S AND WOMEN'S SEXUAL BEHAVIOUR. Please indicate how strongly you agree or disagree with each statement.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a. It is expected that a woman be less sexually experienced than her partner	☐5	☐4	☐3	☐2	☐1
b. A woman who is sexually active is less likely to be considered a desirable partner	☐5	☐4	☐3	☐2	☐1
c. A woman should never appear to be prepared for a sexual encounter	☐5	☐4	☐3	☐2	☐1
d. It is important that the man be sexually experienced so as to teach the woman	☐5	☐4	☐3	☐2	☐1
e. A 'good' woman would never have a one-night stand	☐5	☐4	☐3	☐2	☐1
f. A one-night stand is expected of a man	☐5	☐4	☐3	☐2	☐1
g. It's important for a man to have multiple sexual experiences in order to gain experience	☐5	☐4	☐3	☐2	☐1
h. In sex the man should take the dominant role and the woman should assume the passive role	☐5	☐4	☐3	☐2	☐1
i. It is acceptable for a woman to carry condoms	☐5	☐4	☐3	☐2	☐1
j. It is worse for a woman to sleep around than it is for a man	☐5	☐4	☐3	☐2	☐1
k. It is up to the man to initiate sex	☐5	☐4	☐3	☐2	☐1

35) The following statements are about attitudes towards SEX AND MARRIAGE. Please indicate how strongly you agree or disagree with each statement.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a. Homosexuals should be punished	☐5	☐4	☐3	☐2	☐1
b. Birth control should be taught to young people	☐5	☐4	☐3	☐2	☐1
c. Premarital sex for girls leads to a bad reputation	☐5	☐4	☐3	☐2	☐1
d. There is no need for sex education in schools	☐5	☐4	☐3	☐2	☐1
e. It should be made easier to get a divorce	☐5	☐4	☐3	☐2	☐1
f. Sexual intercourse before marriage is wrong	☐5	☐4	☐3	☐2	☐1
g. Men want to marry a virgin	☐5	☐4	☐3	☐2	☐1
h. Sexual intercourse before marriage is acceptable for boys	☐5	☐4	☐3	☐2	☐1
i. Sexual intercourse before marriage is acceptable for girls	☐5	☐4	☐3	☐2	☐1
j. If a boy gets a girl pregnant, he should marry her	☐5	☐4	☐3	☐2	☐1
k. Parents should stay together for the sake of children, even if they don't get along	☐5	☐4	☐3	☐2	☐1

36) The following statements are about attitudes towards the USE OF CONDOMS. Please indicate how strongly you agree or disagree with each statement.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a. Condoms are too much trouble to use	☐5	☐4	☐3	☐2	☐1
b. Condoms are unreliable	☐5	☐4	☐3	☐2	☐1
c. I just do not like the idea of using condoms	☐5	☐4	☐3	☐2	☐1
d. I would avoid using condoms if at all possible	☐5	☐4	☐3	☐2	☐1
e. Condoms ruin the sex act	☐5	☐4	☐3	☐2	☐1
f. Condoms are uncomfortable for both partners	☐5	☐4	☐3	☐2	☐1
g. I do not think condoms interfere with the enjoyment of sex	☐5	☐4	☐3	☐2	☐1
h. I would have no objection if my sexual partner suggested that we use a condom	☐5	☐4	☐3	☐2	☐1

D. KNOWLEDGE

37) The following questions refer to your understanding of condom use. You do not need to have used a condom in the past to answer the following questions.

	Yes	Don't know	No
If you were to use a condom…			
a. Should you always check the expiry date before using it?	☐2	☐1	☐0
b. Should you inflate the condom before putting it on?	☐2	☐1	☐0
c. Should there be any sexual penetration before the condom is properly placed on the penis?	☐2	☐1	☐0
d. Should you carefully roll the condom down on the penis?	☐2	☐1	☐0
e. Should you use water-based lubrication (e.g., KY Jelly, O'My) on the condom?	☐2	☐1	☐0
f. When finished, should you hold the bottom of the condom to the base of the penis when withdrawing?	☐2	☐1	☐0

38) The following questions refer to the use of condoms. Please indicate how easy or hard each would be.

	Very hard	Fairly hard	Fairly easy	Very easy
a. How hard would it be for you to buy condoms?	☐4	☐3	☐2	☐1
b. How hard would it be for you to discuss using a condom before having sex?	☐4	☐3	☐2	☐1
c. How hard would it be for you to use a condom?	☐4	☐3	☐2	☐1
d. How hard would it be for you to refuse to have sex with the person if he or she won't use a condom?	☐4	☐3	☐2	☐1
e. How hard would it be for you to find another pleasurable activity where a condom isn't needed, if no condom is available?	☐4	☐3	☐2	☐1
f. How hard would it be for you to stop sexual activity while you or your partner goes to get a condom?	☐4	☐3	☐2	☐1

39) Do you believe that you can get your partner to use a condom?
   ☐3 Yes
   ☐2 We already use them
   ☐1 Not sure
   ☐0 No

40) Do you think you know how to use a condom?
   ☐2 Yes
   ☐1 Not sure
   ☐0 No

41) Do you think that you can always have condoms available for use?
   ☐2 Yes
   ☐1 Not sure
   ☐0 No

42) The following questions refer to your HIV knowledge. Read each item and decide whether the statement is true or false.

	True	False
a. Birth control pills protect against HIV	$\square_1$	$\square_0$
b. If a man pulls out right before orgasm (cumming), condoms don't need to be used to protect against HIV	$\square_1$	$\square_0$
c. Most people who have HIV look sick	$\square_1$	$\square_0$
d. Vaseline and other oils should not be used to lubricate condoms	$\square_1$	$\square_0$
e. Latex is the best material a condom can be made of for protection against HIV	$\square_1$	$\square_0$
f. Cleaning injection needles with water is enough to kill the HIV virus	$\square_1$	$\square_0$
g. Most people who carry the HIV virus look and feel healthy	$\square_1$	$\square_0$
h. Hand lotion is not a good lubricant to use with a condom	$\square_1$	$\square_0$
i. A woman is not likely to get HIV from having sex with a man unless he is bisexual	$\square_1$	$\square_0$
j. Condoms cause men physical pain	$\square_1$	$\square_0$
k. If you're seeing someone and they agree not to have sex with other people, it is not important to use a condom	$\square_1$	$\square_0$
l. Always leave some room or 'slack' in the tip of the condom when putting it on	$\square_1$	$\square_0$

E. BEHAVIOUR (THINGS YOU DO OR EXPERIENCES YOU HAVE HAD)

43) Do you currently have a medical or family doctor?
   $\square_1$ Yes
   $\square_0$ No

44) During the past 12 months in Canada, was there ever a time when you felt that you needed health care but you did not receive it? This includes times when you did not try to access health care, but felt that you should have. We're not referring to excessive wait times.
   $\square_1$ Yes
   $\square_0$ No

45) The following statements indicate beliefs about health care that you may or may not hold.
Please indicate how strongly you agree or disagree with each statement.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a. Medical experiments can be done on me without my knowing about it	$\square_5$	$\square_4$	$\square_3$	$\square_2$	$\square_1$
b. My medical records are kept private	$\square_5$	$\square_4$	$\square_3$	$\square_2$	$\square_1$
c. People die every day because of mistakes by the health care system	$\square_5$	$\square_4$	$\square_3$	$\square_2$	$\square_1$
d. When they take my blood, they do tests they don't tell me about	$\square_5$	$\square_4$	$\square_3$	$\square_2$	$\square_1$
e. If a mistake were made in my health care, the health care system would try to hide it from me	$\square_5$	$\square_4$	$\square_3$	$\square_2$	$\square_1$
f. People can get access to my medical records without my approval	$\square_5$	$\square_4$	$\square_3$	$\square_2$	$\square_1$
g. The health care system cares more about holding costs down than it does about doing what is needed for my health	$\square_5$	$\square_4$	$\square_3$	$\square_2$	$\square_1$
h. I receive high-quality medical care from the health care system	$\square_5$	$\square_4$	$\square_3$	$\square_2$	$\square_1$
i. The health care system puts my medical needs above all other considerations when treating my medical problems	$\square_5$	$\square_4$	$\square_3$	$\square_2$	$\square_1$
j. Some medicines have things in them that they don't tell you about	$\square_5$	$\square_4$	$\square_3$	$\square_2$	$\square_1$

46) During the last month have you often been bothered by feeling down, depressed, or hopeless?
$\square_1$ Yes
$\square_0$ No

47) During the last month, have you often been bothered by little interest or pleasure in doing things?
$\square_1$ Yes
$\square_0$ No

48) Have you EVER been diagnosed with or treated for depression?
$\square_1$ Yes
$\square_0$ No

193

49) Have you EVER been diagnosed with or treated for a psychological disorder?
    ☐$_1$ Yes
    ☐$_0$ No

50) Please indicate how often each applies to you.

	Always $\longleftrightarrow$ Never			
a. How often are you able to say no to people's requests when you want to?	☐$_4$	☐$_3$	☐$_2$	☐$_1$
b. How often are you able to say no to your partner's requests when you want to?	☐$_4$	☐$_3$	☐$_2$	☐$_1$
c. How often are you able to start a conversation?	☐$_4$	☐$_3$	☐$_2$	☐$_1$
d. How often are you able to discuss something, even if others have the opposite opinion?	☐$_4$	☐$_3$	☐$_2$	☐$_1$
e. How often are you able to discuss something with your partner, even if he/she has the opposite opinion?	☐$_4$	☐$_3$	☐$_2$	☐$_1$

The rest of the survey includes sensitive questions. Remembering that all of your answers are anonymous, please answer these questions as honestly and accurately as possible.

This section refers to your use of drugs, alcohol, and tobacco.

51) Have you EVER smoked cigarettes on a DAILY basis?
    ☐$_1$ Yes
    ☐$_0$ No → go to question 53

52) For how long did you smoke cigarettes on a daily basis (in months)?
    _____

53) Do you CURRENTLY smoke cigarettes?
    ☐$_2$ No, not at all
    ☐$_1$ Yes, occasionally
    ☐$_0$ Yes, daily

54) During the past 12 months, on average how often did you drink alcoholic beverages?
    ☐$_0$ Never
    ☐$_1$ Less than once a month
    ☐$_2$ Once a month
    ☐$_3$ 2-3 times a month
    ☐$_4$ Once a week
    ☐$_5$ 2-3 times a week
    ☐$_6$ 4-6 times a week
    ☐$_7$ Daily

55) In the past 12 months, how often have you had 5 or more alcoholic drinks on one occasion?
- $\square_0$ Never
- $\square_1$ Less than once a month
- $\square_2$ Once a month
- $\square_3$ 2-3 times a month
- $\square_4$ Once a week
- $\square_5$ 2-3 times a week
- $\square_6$ 4-6 times a week
- $\square_7$ Daily

56) Have you ever tried or used illegal drugs, such as marijuana, ecstasy, cocaine, or others?
- $\square_1$ Yes
- $\square_0$ No

57) Have you ever used illegal drugs such as marijuana, ecstasy, cocaine, or others on a weekly basis?
- $\square_1$ Yes
- $\square_0$ No

58) Have you ever injected drugs that were not prescribed by a doctor?
- $\square_1$ Yes
- $\square_0$ No

The following questions refer to your family environment.

59) Have you ever discussed marriage with the person/people who you lived with and raised you while growing up?
- $\square_1$ Yes
- $\square_0$ No

60) Have you ever discussed contraception with the person/people who you lived with and raised you while growing up?
- $\square_1$ Yes
- $\square_0$ No

61) Have you ever discussed HIV prevention with the person/people who you lived with and raised you while growing up?
- $\square_1$ Yes
- $\square_0$ No

62) Have you ever discussed premarital sex with the person/people who you lived with and raised you while growing up?

☐$_1$ Yes

☐$_0$ No

63) Have you ever discussed HIV prevention or safer-sex practices within a school class that you attended?

☐$_2$ Yes

☐$_1$ No

☐$_0$ Can't remember

The following questions refer to your current partner. Recall that when referring to your current partner, we mean the person that you are in a relationship with or dating most predominantly.

64) To the best of your knowledge, how many sexual partners has your current partner ever had?

_____

65) The following questions are about the actions of your current partner.

To the best of your knowledge…	Yes	Don't know	No
a. Did your current partner ever have more than one sexual partner in the same time period?	☐$_2$	☐$_1$	☐$_0$
b. Does your current partner have multiple sexual partners?	☐$_2$	☐$_1$	☐$_0$
c. Has your current partner ever paid for sex? Paid sex includes sex exchanged for money, drugs, or other goods such as clothing, shelter or protection.	☐$_2$	☐$_1$	☐$_0$
d. Did your current partner ever inject non-prescribed drugs?	☐$_2$	☐$_1$	☐$_0$
e. Is your current partner HIV positive?	☐$_2$	☐$_1$	☐$_0$
f. If you were to ask your partner to use a condom, would he/she resist?	☐$_2$	☐$_1$	☐$_0$

This section refers to your sexual behaviour.

66) Over the course of your lifetime, approximately how many people have you had sex with? By sex, we mean sexual intercourse.

_____ → If you answer '0', go to question 70

67) Was a condom used the last time you had sex?

☐$_2$ Yes

☐$_1$ For part of the time

☐$_0$ No

68) When you have sex with a partner, how often do you use condoms?

$\square_4$------------------$\square_3$------------------$\square_2$-----------------$\square_1$-----------------$\square_0$

Every time   Almost always   Sometimes   Rarely   Never

69) How concerned are you that you might have had sex with someone who may have given you the HIV virus?

$\square_4$---------------------------$\square_3$---------------------------$\square_2$--------------------------$\square_1$

Very concerned   Moderately concerned   A little bit concerned   Not concerned at all

70) What are the chances that you will get HIV?

$\square_4$--------------------$\square_3$-----------------$\square_2$-----------------$\square_1$

High   Moderate   Slight   No chance

71) How worried are you about getting HIV?

$\square_4$----------------------$\square_3$--------------------$\square_2$--------------------$\square_1$

Very worried   Not worried at all

72) Do you, or your partner, hope to get pregnant in the next 12 months?

$\square_1$ Yes

$\square_0$ No

73) In the past 3 months, how many movies or shows did you watch that were X-rated?

_____

The following questions refer to your experiences in your relationships.

74) Has your current partner said things that hurt you or made you feel bad about yourself?

$\square_0$ Never

$\square_1$ Once a month or less

$\square_2$ 2-3 times a month

$\square_3$ Once a week

$\square_4$ 2-6 times a week

$\square_5$ Once a day

$\square_6$ Several times a day

75) Has your current partner tried to control where you go, who you see, and/or what you do?

$\square_0$ Never

$\square_1$ Once a month or less

$\square_2$ 2-3 times a month

$\square_3$ Once a week

$\square_4$ 2-6 times a week

$\square_5$ Once a day

$\square_6$ Several times a day

76) Has your current partner threatened to physically hurt you?
- $\square_0$ Never
- $\square_1$ Once a month or less
- $\square_2$ 2-3 times a month
- $\square_3$ Once a week
- $\square_4$ 2-6 times a week
- $\square_5$ Once a day
- $\square_6$ Several times a day

77) Has your current partner hit, pushed, shoved, kicked, slapped, or in any other way physically hurt you?
- $\square_0$ Never
- $\square_1$ Once a month or less
- $\square_2$ 2-3 times a month
- $\square_3$ Once a week
- $\square_4$ 2-6 times a week
- $\square_5$ Once a day
- $\square_6$ Several times a day

78) Were you EVER forced to have sex when you did not want to?
- $\square_2$ Yes, more than once
- $\square_1$ Yes, once
- $\square_0$ No → go to question 80

79) If yes, did this occur when you were younger than 15 years old?
- $\square_1$ Yes
- $\square_0$ No

80) Have you been afraid of being hit, pushed, shoved, kicked, slapped, or forced to have sex by your current partner?
- $\square_2$ More than once
- $\square_1$ Once
- $\square_0$ Never

81) Have you been physically, sexually, or verbally abused by a previous partner?
- $\square_2$ More than once
- $\square_1$ Once
- $\square_0$ Never

82) Do you have any additional comments or suggestions regarding the survey that you would like to share with us?

_____

_____

_____

_____

_____

_____

_____

APPENDIX F: Consent for participation for online participants

Relationships and Experiences among Middle Eastern and/or Arab Canadians

Thank you for your interest in this survey. You are being invited to participate in a research study intending to apply the Theory of Gender and Power to understand relationships and experiences among Middle Eastern and/or Arab Canadian males and females. The study is based in the Department of Health Studies and Gerontology at the University of Waterloo. This research is especially important in attempting to identify risk factors for HIV in this broad ethnic group. Participation in this study will allow researchers to gain crucial information in regards to equality between partners in relationships among Middle Eastern and/or Arab Canadians and its association with HIV risk.

Participation in this study is completely voluntary, involvement is confidential and all answers are anonymous. You will NOT be asked to leave your name or any other identifying information within the survey, and the website also will not collect any identifying information. If you do choose to participate, you will be invited to complete the online survey, which can be accessed by clicking on the link at the end of this page.

The survey includes personal questions regarding various aspects of your life, such as alcohol use, work stress, sexual behaviour, and involvement with high-risk partners. For example, you will be asked about the number of sexual partners you and your current partner have had in the past. You do NOT need to be sexually active to be eligible to participate. If you find that you are uncomfortable answering some questions, please be assured that this discomfort is expected to be short lived and that answers are anonymous, and you can NOT be contacted regarding your answers. Should participation in this study, or reading or reflecting on any of its questions, raise any personal issues for you that you would like to discuss with a professional, telephone numbers and online links to support resources provided by the Canadian Centre on Substance Abuse, the Canadian Mental Health Association, the Public Health Agency of Canada, and Health Canada are available at the end of the survey if you should require them. If you do not complete the survey, you can access these resource links by leaving all remaining questions blank and skipping to the end of the survey. In addition, you also can contact the Project Coordinator or the Principal Investigator via the contact information listed at the bottom of this screen.

Data will be encrypted and protected allowing access only to the investigators on the research team on a password-protected computer. Data will be downloaded every three days by the Project Coordinator and stored on a password-protected computer. All data will be removed from the server, which is located at the University of Waterloo, by the summer of 2007. In addition, to ensure privacy, please delete this site from your internet history once you have completed the survey.

In order to be able to participate in the study, you must fit the following criteria. You should be:
- o of Middle Eastern and/or Arabic descent,
- o currently in a relationship or dating for more than 21 days (3 weeks),
- o between 18 and 35 years of age,
- o heterosexual,

- able to comprehend, read, and write English, and
- living in Canada

The survey will take approximately 22 minutes of your time. Please answer as accurately and truthfully as possible. You have the option of skipping/not answering any questions. Also, you may withdraw from the survey at any time without submitting your answers by closing the browser.

Prize draw: You will also have the chance to enter a draw to win a $25 online gift certificate to Amazon.ca. The odds of winning are 1/15. Entering the draw is optional. If you choose to enter the draw, an email address for this study will be made available at the end of the survey. To enter, please send your email address. Once the draw has taken place, all winners will be contacted via email with an attachment on how to use their electronic gift certificate. All email addresses will be permanently deleted at the end of the draws. Email addresses will not be shared with others and it is NOT possible to link your email address to the survey answers because you are required to go to a different online location to leave your contact information.

Reporting results: Study results will be posted on the http://www.redwhitegreen.com/ website in the summer of 2007. Results and scientific papers will refer to grouped data, NOT individual data. That is, trends will be reported but people will not be able to identify you in any way.

If you have any questions regarding the study, please contact:

Project Coordinator: University of Waterloo, Health Studies & Gerontology, relationships@ahsmail.uwaterloo.ca

Principal Investigator: Dr. Sandra L. Bullock, PhD., University of Waterloo, Health Studies & Gerontology, sbullock@uwaterloo.ca, (519) 888-4567 Ext. 32378

The study has been reviewed and received ethics clearance through the Office of Research Ethics (ORE) at the University of Waterloo. If you have comments or concerns resulting from your involvement in this study, you may contact Dr. Susan Sykes, Director, ORE. The telephone number for ORE is (519) 888-4567, Ext. 36005, the email is ssykes@uwaterloo.ca.

Statement of consent: I agree to participate in the study 'Relationships and Experiences among Middle Eastern and/or Arab Canadians'. I have read and understand the above information given. I understand that participation in the study and the draw is voluntary, that I can withdraw at any time, and that my involvement is confidential and all my answers are anonymous.

You will gain access to the survey only if you accept these terms.

I Agree

APPENDIX G: Letter of support

Cover sheet

A community advisory committee was formed for the proposed study as it makes the research more relevant and the uptake of the knowledge generated more rapid. The proposed study's community advisory committee consists of three members (two males, one female). All three are members of the Middle Eastern and/or Arab community, circulate in the community and among other Middle Easterners almost exclusively, and frequent several different organized Middle Eastern social events. One of the members is the host of the web site where the main link to the study will be posted.

This is a smaller group than is typically found in larger, better funded studies; however it is very time consuming to have a large committee, and this is not possible for the proposed study. It must be noted that the members are not people of power in the community whose involvement could in any way pressure people to become involved. They also will have no ability to keep the study results from publication; however, they may well be very important in helping to put some of the results into context if results are not as expected.

The members have volunteered to be part of the community advisory committee, as they feel the proposed research is important for the Middle Eastern and/or Arab community. The members do not represent one single community group, because one group would likely have a particular bias than by inviting members from several Middle Eastern and/or Arab community groups. Two of the members are at arm's length to the author, while the other is a friend. The support letter has been signed by two of the members, on behalf of the community advisory committee.

Dear Nour:

After carefully reading the report and the survey questions on the proposed study we feel that it will not offend the population of interest. Although the study does touch on many controversial issues and topics and the survey asks many personal questions, the process of a web-based survey will allow subjects to answer freely as well as honestly without fear.

We found that the questions are not offensive, many other surveys and questionnaires we have personally completed were just as personal. The topics of sex, contraceptives, abuse, and HIV are of great concern and interest to the Middle Eastern-Canadian population and studies that bring light to these issues should be highly acknowledged.

With that said, one cannot predict people's reactions, thoughts, feelings, or fears, but the study is important enough to take the chance to gain information. Either way, we feel that the study will not be taken as offensive, but looked at for what it is; a study that will bring about knowledge and further education.

Sincerely,

Raya Alsaigh & Yousif Kazandji

APPENDIX H: Thank you letter for online participants

Project Coordinator: University of Waterloo, Health Studies and Gerontology, relationships@ahsmail.uwaterloo.ca
Principal Investigator: Dr. Sandra L. Bullock, PhD., University of Waterloo, Health Studies and Gerontology, sbullock@healthy.uwaterloo.ca, (519) 888-4567 ext. 32378

Thank you for participating in the study! This research is important in attempting to identify risk factors for HIV among Middle Eastern and/or Arab Canadians. Participation in this study allows researchers to gain crucial information in regards to HIV prevention among this ethnic group. We would like to remind you that your involvement is confidential, your answers are anonymous, and that you cannot be identified to your answers. Data will be encrypted and protected allowing access only to the investigators on the research team on a password-protected computer. Data will be downloaded every three days by the Project Coordinator and stored on a password-protected computer. All data will be removed from the server (which is located at the University of Waterloo) by the summer of 2007.

At the bottom of this screen, you will find a number of resources that you can access for information or assistance regarding substance use, mental health, family violence, and HIV/AIDS. If you have any further questions or need assistance to find additional resources, please contact the Project Coordinator or the Principal Investigator as indicate above.

Study results will be posted on the http://www.redwhitegreen.com/ website in the summer of 2007. Results and scientific papers will refer to grouped data, NOT individual data. That is, trends will be reported but people will not be able to identify you in any way.

If you know anyone who would be interested in participating in this survey, please pass on our email address, relationships@ahsmail.uwaterloo.ca, or the survey link. You can also print this page for your reference. After doing so, please delete this site from your internet history to ensure privacy.

You now have the option in entering the draw to win a $25 online gift certificate to Amazon.ca. You will have 1 in 15 chance of winning. By agreeing to enter the draw, you are also agreeing to Amazon.ca's regulations for the use of their online gift certificates.

If you agree, please send your email address to surveydraw@ahsmail.uwaterloo.ca. You will be contacted via email if you win the gift certificate. All email addresses will be deleted following the draw.

Thank you once again for your participation and your time!

The study has been reviewed and received ethics clearance through the Office of Research Ethics (ORE) at the University of Waterloo. If you have comments or concerns resulting from your involvement in this study, you may contact Dr. Susan Sykes, Director, ORE. The telephone number for ORE is (519) 888-4567, Ext. 36005, the email is ssykes@uwaterloo.ca.

Resource List

The following resources are available to you if you require further information, advice, or help/support on the issues raised in this survey:

The Canadian Centre on Substance Abuse (CCSA)—the following link will direct you to a database where you can search for substance abuse information and treatment services close to where you reside.
http://www.ccsa.ca/CCSA/EN/Addiction_Databases/TreatmentServicesForm.htm

Drug and Alcohol Registry of Treatment (DART)—the following telephone number serves individuals that need immediate assistance and/or treatment information regarding drug and/or alcohol abuse. Toll-free and open 24 hours a day.
1-800-565-8603

The Canadian Mental Health Association (CMHA)—the following link will direct you to a database where you can search for a CMHA location close to where you reside, which offers information and support to people about mental health issues.
http://www.cmha.ca/bins/loc_page.asp?cid=58-85&lang=1

Mental Health Service Information Ontario—the following telephone number serves individuals who are looking for mental health information, programs, or services. Toll-free and open 24 hours a day.
1-866-531-2600

The Public Health Agency of Canada (regarding violence)—the following link will direct you to the contact information for the National Clearinghouse on Family Violence for information and resources on family violence.
http://www.phac-aspc.gc.ca/ncfv-cnivf/familyviolence/refer_e.html
Telephone number for the National Clearinghouse on Family Violence: 1-800-267-1291

Health Canada (HIV and AIDS information)—the following link will direct you to information regarding HIV and AIDS, including services geared to individuals living with, or affected by, HIV.
http://www.hc-sc.gc.ca/dc-ma/aids-sida/index_e.html

Canadian AIDS Treatment Information Exchange (CATIE)—the following telephone number serves individuals living with HIV who are looking for HIV treatment information, HIV resources such as testing clinics, or support. Staff is available Monday, Tuesday, and Thursday, 10am-6pm (ET) and Wednesday 1pm-9pm (ET). Toll-free.
1-800-263-1638

APPENDIX I: Power calculations for selected independent variables among condom-use risk analyses

	Females	Males
Independent variable	Age difference	Attitudes toward condoms
N	52	46
Alpha level	0.05	0.05
SD of independent variable	3.12	7.56
Correlation coefficient between independent and dependent variables	0.24	0.37
Slope of dependent variable	0.11	-0.09
Power	0.41	0.75
Sample needed to attain power = 0.8	130	51