

DIRECT AND INDIRECT PATHS OF PARENTAL SOCIAL INFLUENCE IN
UNDERSTANDING AND PREDICTING CONDOM USE AMONG LATE
ADOLESCENTS AND YOUNG ADULTS

by

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THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

in the department

of

Psychology

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SIMON FRASER UNIVERSITY

December 1997

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0-612-24298-6

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Abstract

This study examined a model of condom use prediction that combined the Theory of Reasoned Action and variables pertaining to parental social influence. Research participants were 242 sexually active heterosexual undergraduate females, aged 17-24, who completed questionnaires regarding their sexual histories, attitudes about using condoms, opinions of salient referents, relationships and communications with parents, sexual guilt and consciousness, and self efficacy in discussing condom use with a partner. Twenty-six percent of the research participants reported never using condoms while 22.7% reported always using condoms. A further 17.8% stated that they almost always used a condom. Path analyses did not support the Theory of Reasoned Action in its original form, however, suggested modifications contribute to previous debate regarding the relative importance of variables in the model. The augmented model was also not supported in its entirety although numerous paths were found to function as predicted. Suggested modifications made theoretical sense and bear further investigation.

ACKNOWLEDGMENTS

No dissertation reaches completion without the assistance and support of many people. In particular I wish to thank the members of my committee who provided me expert assistance in refining my ideas, conceptualizing my model, and mastering new and challenging statistical analyses. Their consistent support and long term commitment in helping me complete this final requirement means a great deal to me. Over the years they have also served as excellent role models of ethical and professional behavior.

Special thanks must also go to the questionnaire respondents who generously shared personal information about themselves and without whom the study could not have gone forward.

Joan Foster and Elizabeth Michno, statistical and computer consultants, provided invaluable assistance on those dark days when programs crashed and data seemed to disappear into thin air. Their help has been greatly appreciated.

To my friends and extended family who cheered me on over the rough spots and provided valuable moral support- I thank you.

Finally, I wish to express my deep gratitude to my husband, Don, whose steadfast belief in my ability and unflagging support have helped me maintain the confidence and determination necessary to realize this long held dream.

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Chapter 1



INTRODUCTION

The psychological journey from adolescence to adulthood is characterized by the important task of forging an identity while negotiating new social roles, and increasing autonomy and responsibility. The physical journey from adolescence to adulthood is characterized by progression through puberty involving an increase in stature, the acquisition of secondary sex characteristics, and the biological ability to reproduce. In North America this stage of social and biological development is accompanied by varying degrees of increasing interpersonal intimacy and sexual experimentation beginning anywhere from early adolescence to late adolescence or young adulthood. However, as adolescents move towards increasing sexual intimacy they begin to place themselves at risk for the potential undesirable sequelae of sexual activity such as premature, unplanned pregnancy, and disease. Therefore, it is an important task for those who are concerned with adolescents to do everything possible to foster the acquisition of responsible protective sexual behaviors at the outset of sexual exploration in this developmental phase. This issue has been of particular concern in North America given our high rates of adolescent pregnancy and sexually transmitted diseases. Such long-standing concerns have been heightened in recent years by the incursion of HIV and AIDS into heterosexual, female, and adolescent populations.

Adolescent pregnancy

Although female adolescents in the United States are not more sexually active than their counterparts in other western industrialized nations, the U.S. has the highest rate of adolescent pregnancies, births and abortions of all these other countries (Warren, 1992). According to data collected in 1981, among 15-19 year olds Canada holds the 3rd highest pregnancy rate of industrialized nations at 44 per thousand, trailing England and Wales at 45 per thousand, and the United States at 96 per thousand. The Netherlands have the lowest rate at 14 pregnancies per thousand adolescent girls in this age group (Jones, et al., 1986) Among girls younger than 15, those in the United States have a pregnancy rate five times higher than their cohorts in any other industrialized nation. The birth rate is

more than 5 per thousand for American 14 year olds. Canada is the country that most closely approaches that rate at one per thousand (Warren, 1992). The most recent Canadian figures available indicate that in 1994 there were 14,667 therapeutic abortions performed on adolescents aged 15-19 and 8,153 live births for adolescents aged 13 to 17 (Statistics Canada, 1997).

Such pregnancy rates are a result of some adolescents failing to protect themselves at all and others being inconsistent in their use of prophylactics. Teenagers who engage in sexual intercourse in early adolescence are less likely to use contraception than those who become sexually active later. As a result, the probability of an inadvertent pregnancy within six months of the initiation of intercourse is almost twice as high for teens under 16 than for those who wait until 18 or 19 years old to begin sexual intercourse (Mosher & Bachrach, 1987). In an American survey by Leland and Barth (1992), 21.8% of sexually active female teens indicated that they had never used birth control. Less than half of the girls having sex (22.2%) reported always using contraception, and 46.6% reported almost always using birth control. In British Columbia, 10% of sexually active male high school students and 11% of sexually active female high school students reported that they had been pregnant or caused a pregnancy at least once. The use of contraception increased steadily with grade level and 77% of males and 76% of females reported consistently using some form of birth control other than "withdrawal" (Tonkin, Milner, and Cox, 1994). These findings suggests that a substantial portion of sexually active adolescents are concerned with protecting themselves from pregnancy once they have become sexually active, however many have difficulty in consistently following through and taking preventive measures. This places them at risk not only for all of the social (Jaccard and Dittus, 1991) and emotional problems associated with unwanted pregnancies, such as making choices about abortion or adoption or raising the child which is often associated with truncated education and a cycle of poverty, but also at risk for sexually transmitted diseases (STDs). Even adolescents who do use contraception may still be at risk for disease depending on their chosen method of birth control.

Incidence of sexually transmitted diseases.

The extent of sexually transmitted diseases (STDs) in the adolescent population can be viewed as a general indicator of unprotected sexual behavior and such illnesses are of concern for a number of reasons. First, it is not always obvious, particularly for females, that one has contracted an STD and left untreated, long term consequences such as pelvic inflammatory disease, impaired fertility, and

neurological difficulty can be severe. Moreover, while most such afflictions can be treated quickly and easily with medication, some STDs such as herpes become a chronic condition with consequences for future intimacy and child-bearing. Finally, having an STD can increase the chance of acquiring HIV, if exposed to it, with its profound and life threatening consequences (King, Beazley, Warren, Hankins, Robertson, and Radford, 1988).

Unfortunately due to differences in reporting requirements between public and private health delivery systems, it is difficult to estimate the national incidence and prevalence rates of STDs in the United States (National Research Council, 1990). According to the best estimate of adjusted rates of the National Research Council (1990), among sexually active individuals 10-19 year olds have the highest rates of gonorrhea and syphilis. Rates of these diseases decrease with age. More recently, Fleming, McQuillan, Johnson, Nahmias, Aral, Lee and St. Louis (1997) report that the seroprevalence of herpes simplex virus type 2 (genital) has risen 30% since the late 1970's. There are now 45 million infected noninstitutionalized civilians, 1 in 5 persons over the age of 12, in the United States with the incurable virus. Approximately one quarter of women are infected compared to approximately 18 % of men and most individuals remain unaware that they carry and can transmit the virus. The presence of the herpes simplex virus type 2 increases the risk of contracting HIV.

Among the Canadian college students surveyed by King and his colleagues (1988), 3% of males and 6% of females reported having had a sexually transmitted disease. In a British Columbia wide health survey of adolescents in grades 7 through 12, 4% of sexually active males and 5% of sexually active females reported having had an STD (Tonkin et al., 1994). Recent figures from Health Canada (1997) indicate that while the overall rate of gonorrhea has decreased from 1990 to 1995 the highest rates of the notifiable disease occurred in females aged 15 to 19. The second highest rate occurred in females aged 20 to 24. Seventy percent of all cases reported in 1995 occurred in females. Twenty to forty percent of cases of pelvic inflammatory disease and 14% of cases of tubal infertility can be attributed to gonococcal infection and it is estimated that treatment for the disease and its effects costs more than forty-three million dollars annually. Health Canada recommends that adolescent and young adults, especially females, be targeted for primary prevention strategies. According to another recent report by Health Canada (1997), chlamydial infections are of greater concern representing 84% of all cases of sexually transmitted disease in Canada. It is of special concern as it can be passed to neonates during birth with serious consequences, has 60% rate of concurrent gonococcal infection, and 70% of

women are asymptomatic. Chlamydial infections cause 65% of all pelvic inflammatory disease, 70% of all tubal infertilities, and 30% of all ectopic pregnancies. Treatment for chlamydial infections and resulting conditions costs between 41 and 123 million dollars annually. While only 5 to 6% of women are reported to have this sexually transmitted disease, rates are dramatically higher for adolescents and college students who have rates of 15% and 25% respectively. In 1995 females aged 15 to 19 had nine times the national rate (males and females combined) and women aged 20 to 24 had 8 times the national rate. In the same year 75% of all infections among females occurred in women aged 15 to 24. Health Canada concludes that the young are at particular risk of contracting this disease as a result of their rates of high risk behavior including higher numbers of sexual partners, unprotected sex, and the use of nonbarrier contraception.

HIV/AIDS

The incidence of unplanned pregnancy and disease among adolescents is of sufficient concern to warrant finding ways to influence teens to protect themselves and assist them in making responsible, safer choices with regards to their sexual behavior. However, the spread of HIV and AIDS around the world and into new subpopulations with its attendant specter of early demise has served to heighten concern still further and focus renewed attention on adolescent sexuality.

Although two-thirds of Canada's reported AIDS cases are found in the country's largest cities of Toronto, Montreal, and Vancouver, there is no province or territory that has failed to report the presence of AIDS in their region. In 1990, British Columbia had the highest rate of AIDS cases in Canada at 238.3 per million people (Health & Welfare Canada, 1990). As of June 1995, there were 11,644 cases of AIDS in Canada and there have been 8,274 deaths due to the syndrome. Forty-two percent of AIDS cases have been reported in Ontario, 30% in Quebec, and 18% in British Columbia (Canadian Laboratory Center for Disease Control, 1995). According to figures released by Canada's Laboratory Center for Disease Control (1995), 72% of AIDS cases in 1994 occurred among men who were exposed to the virus through sex with other men. Six percent of AIDS cases occurred among individuals who had been exposed through injection drug use, while individuals who engaged in both injection drug use and were men who had sex with men, accounted for 5.07% of the cases. The exposure category accounting for the second largest number of AIDS cases at 8.31%, was that of heterosexual contact with a person determined to be at risk for infection. Although the number of cases

of acquired in Canada through heterosexual contact is still small, the proportion has virtually quadrupled since the beginning of the pandemic (Canadian Laboratory Center for Disease Control, 1995). Individuals who have contracted Human Immunodeficiency Virus (HIV) through heterosexual transmission is the fastest growing risk group in Europe and the United States (Van De Wijgert, and Padain, 1993).

In British Columbia, there were 1,956 persons with AIDS by the end of 1994 (British Columbia Center for Disease Control, 1995). The vast majority of individuals in B.C. with AIDS are White (90.05%). Almost three and a half percent of all AIDS cases were reported among Native North American, Inuit, or Metis people and the remaining AIDS cases were reported among other ethnic groups including Black, Hispanic, Asian, and Indo-Asian ethnic groups. Eighty-six percent of the individuals with AIDS were recorded as having a homosexual or bisexual mode of acquisition, 4.55% a homosexual and injection drug use mode of acquisition, 2.61% were intravenous drug users, and 2.76% had a heterosexual mode of acquisition. Other modes of acquisition accounting for the remaining cases included hemophilia, blood products, perinatal, and unknown (British Columbia Center for Disease Control, 1995).

In 1986 the Institute of Medicine in the United States warned that the development of a vaccine for HIV would be slow for the following reasons. First, there are currently no vaccines against viruses similar to HIV with the exception of one developed for felines. Second, HIV has properties that will make the creation of a vaccine difficult and will also require a large expansion in the knowledge base. Beyond the scientific obstacles are ethical, social, and legal issues that could slow or limit the availability and use of a vaccine. Finally, because the experts most likely to develop such a vaccine work in industry, there are economic factors influencing the production of a vaccine. Development is likely to be expensive, financial returns small, and companies are likely to be concerned about liability. In light of these factors the Institute of Medicine recommended that social science research focus on improving the understanding of sexual and drug use behaviors as they relate to AIDS so that effective education programs can be created and implemented. Education was recommended as a means of prevention through changing the behaviors known to transmit HIV.

Piot et al. (1990) are cautious yet optimistic about the possibility of gaining control over HIV infection, although the epidemic has not yet stabilized in some populations. They perceive intervention

to be possible through the identification of biological and behavioral risk factors. They observe that while viruses are predictable, humans can change their behavior and this can be effective in preventing the spread of HIV. This has been demonstrated by the lower infection rates among some high risk groups such as some homosexual and prostitute populations in developed countries. However, Piot and his colleagues state that "Complacency is one of the worst dangers when facing an epidemic since it would fundamentally threaten our ability to control the problem" (p. 410).

Although researchers are working on vaccines and cures in an attempt to halt the spread of this virus, until such alternatives are available prevention must be a primary concern. Prevention through education aimed at behavior change continues to be necessary and at the forefront of efforts to deal with this virus into the second decade since its discovery (Van De Wijgert, and Padain, 1993). Since sexual intercourse is a primary means through which HIV is transmitted, teaching people to lessen the risk to themselves and their partners during sexual activity is a logical approach to prevention. As noted previously, in North America sexual activity and thus risk begin in adolescence.

Adolescent risk for AIDS

The years of 1989 through 1991 have been characterized as a period in which AIDS was believed to be a disease of the disenfranchised, including the poor, intravenous drug users, homosexuals, and the promiscuous. However, it was during that time that concerns regarding teenage sexuality and the possible spread of the disease into the adolescent population began to emerge. Articles regarding this possibility began to appear in popular magazines such as *Seventeen*, *Time*, *Mother Jones*, and *Christianity Today*. (Brenders & Garrett, 1993). Several reports presented at the VI International AIDS conference in 1990 recommended increased focus on adolescents as new AIDS diagnoses in young adults were suggestive of acquisition in adolescence.

While only a small percentage of AIDS cases are diagnosed in the adolescent population in Canada and the USA, nearly 20% of individuals diagnosed with AIDS in both countries are in their twenties. Given that the incubation rate of the virus, it is expected that most persons diagnosed with AIDS in their early twenties were exposed to HIV infection in adolescence (National Research Council, 1990; Tonkin, et al., 1994)

Prevalence

According to Kilbourne, Buehler, and Rogers (1990), in 1984 AIDS was the 10th leading cause of death between 15-24 year olds in the United States at a rate of 126/100,000 and by 1987 it had moved into 6th position at a rate of 550/100,000. Different prevalence rates of HIV infection have been reported across American adolescent populations and studies. Although the National Research Council (1990) acknowledged the limitations of available data that make it impossible to know the exact extent of AIDS among adolescents, it is clear that the AIDS virus is seeded in some segments of the adolescent population. Further, it appears that in some locations and some population subgroups the spread has been substantial. Although pockets of infection seem to occur in the coastal areas of the USA, cases of HIV infection have been found by Burke, Brundage, Goldenbaum, Gardner, Peterson, et al., 1990 (as cited in National Research Council, 1990) in 17-19 year olds applying for military service in 41 different states and the District of Columbia. In an adolescent population thought to be low risk, Dr. Keller and his colleagues from the University of Medicine and Dentistry in New Jersey, found an unexpectedly high seroprevalence¹ rate of 1.24% (Proceedings of the VIth International AIDS Conference, 1991).

In Canada, as of June 30, 1995 only 35 males and 3 females aged 15-19 have been diagnosed with AIDS, which is less than one percent of cases among both males and females. However, the number of individuals diagnosed with AIDS between age 20 and 29 jumps dramatically to 1,873 males and 195 females which represent 17% of AIDS cases among men and 30% of AIDS cases among women (Canadian Laboratory Center for Disease Control, 1995). Given the lengthy incubation period of this disease it can be reasonably assumed that most of these individuals became infected with HIV during adolescence.

In British Columbia, there were 1,956 persons with AIDS by the end of 1994 (B.C. Laboratory Center for Disease Control, 1995). Less than one percent were between age 15 and 19, however, 12.88% were between the ages of 20 and 29. Again, it is likely that individuals with AIDS in their twenties contracted HIV during their teen years. Although the Canadian Centre for Disease Control does not report rates of HIV infection, as of the end of the first quarter of 1995, 8,396 individuals in B.C. have been found to be infected with Human Immunodeficiency Virus (HIV). Seventy-six of them are adolescent males between the ages of 15 and 19 and 2,086 are young men in their twenties. The rate per 100,000 population in 1994 for 15-19 year olds and for those in their twenties are 3.38 and

66.89 respectively. In total 7,263 men are HIV positive. Among the 763 HIV positive females, 46 are between the ages of 15 and 19, and 259 are in their twenties with rates per 100,000 population of 6.21 and 17.66 respectively. Remaining HIV positive test results were unspecified for gender.

While most very young teenagers and those older adolescents who are not sexually active are at little risk for contracting the virus, their risk level will change as they grow older, engage in higher risk behaviors, and as they move to different geographic locations (National Research Council, 1990).

Street Youth: Adolescents at Particular Risk

Adolescents who live on the street are particularly vulnerable to contracting HIV infection as a result of their high risk activities such as unprotected vaginal and anal intercourse, promiscuity, sharing intravenous drug use equipment, and survival sex or prostitution. They are likely to find themselves in situations in which the fear of AIDS is eclipsed by more urgent daily pressures (Radford, King, and Warren, 1989; Proceedings of VIth International AIDS Conference, 1991). As a result of their mistrust of others outside their subculture they are difficult to reach with medical and social services (Radford et al., 1989).

Rachel Stricol and her colleagues, from the New York State Department of Health, tested homeless adolescents in 4 states and found a seroprevalence rate of 4.13%. (as cited in the Proceedings of VIth International AIDS Conference, 1991). This was similar to the findings of The New York State Department of Health in an anonymous seroprevalence study of homeless 13-18 year olds. According to Rogers (1989) (as cited in Radford et al., 1989) there were rates of HIV positivity of 6.88% among male research participants and 5.56% among female research participants.

Due to National record keeping policies it is difficult to determine how many young people in Canada have contracted HIV infection, however, studies in Toronto and Vancouver indicate that HIV has moved into the street youth population. A study completed in Vancouver by Rekart, Chan, James, and Barnett (1989) (as cited in Radford et al., 1989) reported that 5.43% of their sample of street youth tested positive for HIV.

Although there may be limited data regarding the number of street youth with HIV, a nationwide study involving face to face interviews conducted by Radford et al., (1989) clearly reveals that street

youth in Canada, are at high risk for contracting HIV. Ninety-four percent of their sample were sexually active, 49% having experienced intercourse by age 13, 11% as young as age 9. Twenty five percent of the female youth reported rape as their first experience of sexual intercourse. Among those introduced to sex prior to the age of 10, half were raped, of whom 87% were girls and 27% were boys. Such early sexual experiences are believed to be linked to prostitution and drug abuse (Radford et al., 1989) and in this sample more of the prostitutes (23%) and drug abusers (16%) than other types of street youth had sexual intercourse before age 9. Intercourse initiated at an early age is less likely to be associated with contraceptive use, and more likely to be associated with sexually transmitted diseases (Zelnick and Shaw, 1983; Brooks-Gunn and Furstenberg, 1989).

The risk of contracting HIV increases as the number of sexual partners rises. Two thirds of the street youth in the sample had engaged in sexual intercourse with five or more partners. Prostitutes, 14% of the population, reported an average of 250 partners and drug abusers at 11% of the population were the second most promiscuous group (Radford et al., 1989).

Not only do larger numbers of partners increase risk of exposure to HIV but so do certain behaviors including anal intercourse. Eighty-eight percent of male prostitutes reported having engaged in sex with same sex partners. Heterosexual prostitutes reported engaging in this behavior because they needed money or because they believed bisexual relations to be trendy. Four percent of the youth reported their sexual orientation as bisexual and 3% as homosexual, however, 16% reported having had a same sex partner. Twenty-one percent of the street youth reported that they had engaged in anal intercourse, at least once, with slightly more females than males in the group. Male street youth engaging in anal intercourse were more likely to do so with other males (Radford et al., 1989). In Canada, men who have sex with men have been the population hardest hit by AIDS.

Condoms are the best known method for preventing the transmission of HIV during sexual intercourse, however, thirty-two percent of the street youth reported never using condoms. Forty-two percent of research participants reported using condoms always or most of the time, although this proportion dropped to 36% when prostitutes were removed from the group. Twenty-six percent of the street youth reported using condoms "sometimes." Young prostitutes could make more money if they did not wear a condom and street youth tended to not use a condom with people they knew. More prostitutes and drug abusers than other street youth reported having had a sexually transmitted disease

and female prostitutes were significantly more likely than their male counterparts to contract an STD (Radford et al., 1989). Sexually transmitted diseases are an indicator of unprotected intercourse have been found to be correlated with HIV infection (Stiffman and Earls, (1990) as cited in Tonkin et al., 1994).

Twelve percent of street youth reported using IV drugs and half of those individuals reported sharing needles. Prostitutes were the group most likely to be sharing needles, amongst themselves and with their clients. Sixty-eight percent of the prostitutes, and 71 percent of the young offenders were heavily involved in the use of drugs, alcohol, or both (Radford et al., 1989). This is a risk factor for HIV because adolescents who are intoxicated are less likely to use a condom during sexual activity, and high alcohol and high drug use are also associated with a greater number of sexual partners.

It is clear that a subset of adolescents in Canadian society are at high risk for HIV infection as a result of their unsafe behaviors and the circumstances in which they find themselves. There has also been some evidence that HIV has indeed made inroads into the street youth population in North America. But are adolescents with more usual life circumstances at risk for contracting HIV? Is HIV a disease only of the disenfranchised adolescent or need we be concerned for adolescents in the general population?

Risk Factors Among Mainstream Adolescents

Hein (1989) notes that approaches to dealing with the possibility of HIV infection in the adolescent population must take into account their differences from the adult population in relation to this disease. A higher percentage of adolescent cases are acquired by heterosexual transmission and more infected adolescents are asymptomatic so that they are not directed toward testing for medical reasons and do not look ill to potential sexual partners. As a population, adolescents have a higher percentage of "sexual adventurers" who have many partners and rarely use condoms. (as cited in Henggeler, Melton, and Rodrigue, 1992)

A further difference in cases of HIV and AIDS among adolescents is that females seem to have a much higher infection rate. The ratio of AIDS cases of adult males to adult females in the United States was 9:1 as of the end of 1989. Researchers have found the gender difference to be smaller among American adolescents and young adults. Rates have ranged from 4:1 to 1:1 among 15-19 year

olds, increasing to 6:1 among those 20 to 24 years of age (National Research Council, 1990). The ratio of male to female AIDS cases among adults in Canada as of June 1995 is 16:1. In those aged 20-29 the ratio is 9:1 and among the much smaller group of 15-19 year olds the ratio is 11:1. In British Columbia, as of the first quarter of 1995, the ratio of male to female adult AIDS cases is 34:1. The ratio drops to 13:1 among 10-19 year olds and there are no 15-19 year old females with AIDS in the province. British Columbia also tracks the rates of HIV infection reporting a rate of 10 to 1 of male to female positive test results. Among 20-29 year olds, who may have become infected and remained asymptomatic during adolescence, the difference between male and female infection rates drops to 8:1. There is almost no difference between the infection rates of male and female 15-19 year olds at 1.65:1.

It appears that if female adolescents contract HIV, they are most likely to do so through heterosexual sexual activity. According to a study discussed by the National Research Council in the United States (1990), 37% of infected teenage boys contracted the virus through homosexual contact. Among males aged 20 to 24 year olds, 68% of infected persons report a homosexual mode of transmission. The largest risk for teenage boys still appears to be exposure of the virus through contaminated blood products likely as a result of treatment for hemophilia, a sex linked genetic disorder. However, among teen age girls, 37% report exposure to the virus through heterosexual contact, and 28% through IV drug use. The number of females infected through heterosexual contact rises to 41% of women aged 20 through 24 and the number exposed to the virus through IV drug use rises to 40%. According to figures released by the Communicable Diseases Surveillance Center, London which were reported at the VIth International Conference on AIDS by Sian Clark and associates, by the end of 1989 females accounted for 82% of infected 15-19 year old heterosexuals, and 66% of the infected heterosexuals in the 20-24 years age group. In general adolescents have a heterosexual mode of acquisition of HIV that is twice that of adults (Hombs, 1992).

Results of their New England Behavioral Health Study by Lisa Feingold and associates of Providence Rhode Island, were reported at the VIth International AIDS Conference (1991). They indicated that heterosexuals are poor judges of their risk of contracting HIV. In general there was a significant tendency to underestimate the risk, with males being slightly more likely to do so. Thirty-six percent of the sample who thought they were at no risk or slight risk were actually rated by researchers to be at high risk. It was noted that this inability to accurately assess their own risk serves to increase

the risk heterosexuals incur. Although this study involved adults it seems unlikely that adolescents should be better at estimating their level of risk.

AIDS and risk for HIV infection have been reported among main stream adolescents in a survey of 15,549 high school students. Twenty-four of those high school students reported that they were HIV positive or had AIDS. The group was comprised of 19 males and 5 females and their mean age was 15. That is a rate of 1.5 cases per 1000 students aged 12-18 but the researchers caution that because HIV is not a notifiable disease they are not sure of how probable that rate is (Tonkin et al., 1994). However, when survey responses of these students were analyzed they were for the most part associated with risk behaviors although a few cases may have been associated with having received blood products. In the same large study it was further determined that 5% of youth attending school in the province, representing 13,230 adolescents, are at risk for contracting HIV. Risk status was determined by having two or more risk factors including having ever injected an illegal drug, having had four or more sexual partners, having had a sexually transmitted disease, and having not used a condom during last occasion of sexual intercourse. Individuals who had injected illegal drugs were automatically placed in the risk group even if they did not report other risk factors. Fifty-one percent of the at risk teenagers were male and 49% were female. Seventy-one percent of them were between the ages of 16 and 18.

Health and Welfare Canada (1990) characterizes AIDS as an illness of young adults, and as noted previously, STDs and unwanted pregnancies are also of significant concern among adolescents and young adults. To reduce the numbers of adolescents and young adults facing these problems and the subsequent social impact it is vital that they be influenced as much as is possible to develop patterns of sexual behavior that safeguard their health. With regards to AIDS, Dr. Lorne de Neergaard, the AIDS coordinator at the National Board of Health, Copenhagen, Denmark, suggests that it is important to focus on adolescents because; 1) they can be influenced while they are in the process of forming their habits, 2) they are at risk because they will go through a period of changing partners, 3) and prevention of the spread of the disease through early education is a good investment (1988). The same can be said of the other problems acquired through unprotected sexual activity, other STDs and unplanned pregnancy. However, in order to influence adolescent development in this area current patterns of adolescent sexual behavior must be understood so that levels and sources of risk among this population can be identified. Once the ways in which adolescents place themselves at risk are

understood they can then be reduced through education aimed at behavior change and other factors found to be influential.

Characteristics of adolescent sexuality among mainstream youth

Age at first intercourse.

The age at which adolescents begin engaging in sexual intercourse marks the beginning of the risk period for unwanted pregnancy, STDs, and HIV infection (National Research Council, 1990), therefore it is important to know why adolescents choose to become sexually active and at what age they do so.

Some adolescents choose to become sexually active but others remain abstinent. Leland and Barth (1992) explicitly asked the nonsexually active high school students in their study why they had so far refrained from having sexual intercourse. There was no significant difference between number of male and female teens abstaining from having sex. Respondents could endorse a variety of reasons for delaying sexual intercourse and 35.4% indicated they were afraid of contracting AIDS or some other STD, 55.9% indicated they were not ready for sex, 34.6% reported they did not have a boy-friend or girl-friend, religious or other values was a reason endorsed by 22.7%, and 24.7% indicated that their parents wishes were at least part of the reason they were not having sex. Twenty-two percent of nonsexually active students indicated there was some unspecified "other" reason they had not yet engaged in intercourse. Girls were significantly more likely than boys to endorse each reason for not having sex with the exception of lack of boy-friend /girl-friend.

What proportion of adolescents become sexually active? Reports of the average age at which sexually active American teenagers first experience sexual intercourse has ranged in studies from age 13 for boys, and age 14 for girls (Leland and Barth, 1992) to age 16 in general (Jaccard and Dittus, 1991; Gibbs, 1993). There have also been some reports that among sexually active American teenagers there is a fairly even split among the percentage of adolescents beginning coitus at ages 13,14,15, and 16 (Gibbs, 1993). However, regardless of age they commence intercourse, by the close of adolescence 80% of American males and 70% of females have engaged in sexual intercourse (Jaccard and Dittus, 1991). Two recent national American surveys, The National Longitudinal Survey of the Labor Market Experience of Youth, and The National Survey of Young Men and Women, (as cited in National

Research Council, 1990) also reported that regardless of gender or race (black or white), most teenagers report having engaged in sexual intercourse by age 19.

Similar to their American counterparts, most of the British Columbia adolescents who were sexually active had their first experience of coitus between the ages of 14 and 16, although 7% of the boys and 14% of the girls reported that they had been less than 12 years of age (Tonkin et al., 1994). In the Canada wide survey by King and his colleagues, 25.9% of students in grade nine indicated that they had had sexual intercourse.

Canadian figures are somewhat lower although it is clear that a large proportion of teenagers are becoming sexually active by the end of high school. In a province wide survey in British Columbia, 55% of males and 52% of females in grade twelve indicated that they had engaged in sexual intercourse at least once (Tonkin et al., 1994). By the time they attended college or university about 69% of Canadian youth had had sexual intercourse (King, Beazley, Warren, Hankins, Robertson, and Radford, 1988).

Frequency

Among the adolescents surveyed by Leland and Barth (1992) females reported engaging in sexual intercourse an average of 3 times a month and males reported having sexual intercourse an average of 2 times a month. In the 1982 National Survey of Family Growth 25% of 15-19 year old sexually active females reported having sexual intercourse slightly more frequently at a frequency of once a week. A small proportion (16.3%) were having sex more than twice a week (Moore et al., 1987 as cited in National Research Council 1990).

In a large survey of high school students in British Columbia Tonkin et al., (1994) found that 36% of students who have been sexually active have not had a sexual partner in the three months previous to the survey. Forty-nine percent reported having had only one partner, eight percent had engaged in sex with 2 partners, and 7% had engaged in sex with 3 or more partners in the 3 months prior to the survey. In another study approximately 15% of males in grade 11 reported that they had intercourse "often" compared to 10.2 % of their female counterparts (King et al., 1988). Among the college and university students in the survey 37.4% of males and 40.3% females reported having sexual

intercourse “often”, however, 28% of males and 33% of females reported that they had never had sexual intercourse

Number of partners.

While some adolescents remain virgins or do not become sexually active until after they begin college or university, and while most have only one or two partners, there is a subset of teenagers whose number of sexual partners is worrisome from the standpoint of putting them at greater risk of coming into contact with STDs including HIV. In a telephone poll (Gibbs, 1993), the majority of sexually active adolescents (42%) reported having had one partner. The next largest group reported a history of two or three partners (29%), however, 15% of adolescents surveyed reported that they had engaged in sex with five or more partners in their life time. In the province wide survey of high school students in British Columbia by Tonkin et al., (1994) results were similar. Most sexually active students (40%) reported having had just one partner and 33% had engaged in sex with two or three partners, but 16% stated that they had a history of six or more sexual partners in their lifetime.

Males appear to be more likely to have had multiple sexual partners than females as reported in the American 1988 National Survey of Family Growth and the American 1988 National Survey of Adolescent Males (cited in National Research Council, 1990). While 11% of 18-19 year old women stated they had engaged in sex with six or more partners, 26% of males the same age stated they had engaged in sex with six or more partners. While 5% of 18-19 year old females reported a history of 10 or more partners 7% of the males reported a history of 11 or more.

This trend for males to have had more sexual partners than females also occurred in a Canadian sample. Males (63%) were somewhat more likely than females (56%) to report multiple sexual partners and the likelihood of multiple partners increased with grade for both genders which is not surprising (Tonkin et al., 1994). In the nation wide study of high school and college students conducted by King et al. (1988), most grade 11 students had either not begun to have sexual intercourse or had only one or two partners. However, 14% of those in grade 11 had three to five partners and 11.3% had six or more. By college more than half of students surveyed had engaged in sex with more than one partner in their life and 19% reported six or more sexual partners.

Interestingly there is a gender difference in reported duration of relationships in the survey by King and colleagues (1988). While young women in college were more likely to describe their sexual relationships as long-term and serious, young men were more likely to describe their relationships as short term casual relationships and "one night stands". This may mean that if issues of contraception and disease prevention are easier to discuss in longer term serious relationships then females have a greater advantage in this regard. It may be however, that women interpret the relationships they are involved in to be more stable and serious than do their partners (King et al., 1988)

High risk activities for HIV

Although both homosexuals and heterosexuals contract AIDS, most cases in Canada have occurred in the homosexual population. Individuals at highest risk for contracting AIDS are men involved in receptive, anal intercourse in which ejaculation occurs (King et al., 1988). Although the figures vary, national probability studies indicate that some proportion of adolescents will experiment with same gender sexual behavior (National Research Council, 1990). In the National Survey of Adolescent Males (Sonenstein et al., 1989, as cited in the National Research Council, 1990) it was found that 3% of teen males aged 15-19 had engaged in same gender sexual behavior, while in a survey of high school students it was found that 10% of females and 9% of males had engaged in such behavior (Ruben et al., 1988, as cited in by National Research Council, 1990). This is an area of adolescent sexuality we need to learn more about if we are to assist adolescents in lowering their risk of contracting HIV (National Research Council 1990)

In the study conducted by King et al., (1988) one percent of college males and females reported their sexual orientation as homosexual. This figure is low but according to King and his colleagues it is not surprising given that individuals may realize they are attracted to members of the same sex but not take on the identity of being homosexual until they are in their early twenties due to anxiety about social pressures and the perceptions of others.

Bisexual males and male heterosexual intravenous drug users are the most likely route of HIV into the female population (King et al., 1988). Very small proportions of the college sample of King and his colleagues, 1.2% of males and 4% of females, indicated that they were bisexual.

Little is known about the number of teenage girls engaging in anal intercourse which is believed to be more likely than vaginal intercourse to transmit HIV (National Research Council 1990). King et al., (1988) describe receptive anal intercourse as the most dangerous sexual activity in terms of contracting HIV. There have been some small clinic surveys that indicate that a subset of female teens are engaging in this behavior, usually without condoms. Jaffe, Seehaus, Wagner, and Leadbeater, (1988) found approximately 25% of sexually active girls reporting this behavior, and in a study reported by the National Research Council (1990) Kegeles and his colleagues (1989) found 12% of girls reporting such behavior. Because of the risk factor associated with anal intercourse, the National Research Council (1990) recommends increased data collection in this regard.

In a large sample of college and university students surveyed by King et al., (1988) 11 percent reported that they had tried anal intercourse at least once and of these most had tried it a few times. Females were more likely than males to have experienced anal sex. Although grade 9 and 11 students were not asked about anal sex some did put it down in a space provided for "other activities not listed"

Use of condoms

It is clear that a large portion of the adolescent population becomes sexually active prior to leaving their teen years behind and, considering the adolescent STD rates in North America, it is apparent that a significant proportion of sexually active adolescents are failing to protect themselves through the use of condoms. Condoms can also prevent the transmission of HIV (Wigersma and Oud, 1987) when used properly and lubricated with a spermicide (Feldblum and Fortney, 1988).

Walter, Vaughan, Gladis, Ragin, Stephanie, et al (1992) surveyed grade ten students from a New York City borough considered to be an AIDS epicenter. Although there may be some limit to the generalizability of the results because of ethnic background of the research participants, (approximately 59% were black and approximately 28% were Hispanic), it is interesting to examine the proportion of adolescents placing themselves at risk when an STD such as AIDS is known to be present in the general population to a significant degree in that location. In their survey of grade ten students, Walter et al., found that although approximately 38% of males and approximately 47% of the females were in risk category 0 (sexually abstaining and no IV drug use), 30% of the girls having intercourse with a partner they believed to be low risk were not using condoms or were using them inconsistently.

Approximately 14% of the boys were engaging in similar behavior. Twenty-six percent of the boys and 6.5% of the girls were having sex with 2 or more low risk partners with no or inconsistent condom use. Approximately 5% of both genders were engaging in intercourse with one or more high risk partners with no or inconsistent condom use. A partner was categorized as high risk if it was believed that they had engaged in homosexual activity or had used IV drugs. Students having protected sex with one low risk partner comprised only one fifth of the sample.

In the National Survey of Adolescent Males (Sonenstein, Pleck, and Ku 1989a as cited in National Research Council, 1990), only half the males in the highest risk category (9% of the sample) had used a condom at last intercourse. These high risk youth included those who had been having same gender sex, using IV drugs or had a partner who used IV drugs, those with a history of STDs, and those who had sex with a prostitute.

In the survey by Leland and Barth (1992), sexually active teens were asked about their use of contraception. Although condoms may not be the most preferable form of birth control, they offer protection from sexually transmitted diseases in addition to their contraceptive utility. It appears that a large percentage of adolescent females who use any protection at all at first intercourse use condoms, although this proportion drops when teens were asked about last coitus. Only 30% of sexually active adolescent females reported using some form of contraception at first coitus. Of those girls using contraception at first intercourse, 83.9% used a condom or a condom in combination with some other method. When asked about last coitus the portion using contraception rises to 44%. At last intercourse 64% of the 44% using any contraception, used a condom or a condom combined with another method. Thirty-five percent of the sexually active boys reported always using birth control, and 50.9% reported almost always using contraception. However, 13% stated that they had never used contraception. When contraception at first coitus is queried 33.8% report using birth control. Of those boys using contraception the first time they engaged in intercourse the vast majority (91%) used a condom or a condom in combination with some other contraceptive. Half of all sexually active adolescent males reported using contraception at last intercourse. Of those using birth control 84.3% used a condom or condom with another method but 15.7% relied on their partner's oral contraceptive at last intercourse. Even if use of contraception improves it is important to remember that not all contraceptives act as a barrier to HIV and other STDs and so the use of condoms are important for this reason, apart from their contraceptive utility.

In 1988, Canadian college students were specifically asked about their frequency of condom use in a survey by King and his colleagues (King, Cole, and King, 1988). Only 27.6% of sexually active males and 17% of females reported always using a condom. Twenty-nine percent of females and 23.4% of males reported never using a condom. The remaining students were inconsistent in their condom use.

In a 1992 survey of high school students in British Columbia, Tonkin et al., (1994) reported that condom use had increased. Sixty-four percent of sexually active males and 53% of sexually active females stated they used a condom the last time they engaged in sexual intercourse. Condom use declined however as grade level increased. This may be because once sexual activity becomes expected and more regular female adolescents prefer to use oral contraceptives to prevent pregnancy (Pratt, Mosher, Bachrach, and Horn, 1984) and worry less about STDs. In comparing their results to those of a large American study, Tonkin et al. (1994) state that condom use is greater among B.C. high school students than among their American counterparts.

In light of increased public awareness about HIV and the use of condoms as a measure of protection, the National Research Council (1990) noted a new problem in surveys about sexual behavior. When asking about condom use, the socially correct answer is now clear. This makes it difficult to discern how much the reported level of condom use is inflated by the influence of social desirability. However, even taking this into account, it appears that there is considerable room for improvement in the proportion of adolescents reporting condom use.

Factors Thought to Influence Protective Sexual Behavior

What influences sexually active adolescents to protect themselves against the possible negative consequences of unwanted pregnancy and sexually transmitted diseases? It is likely that some factors influence both contraceptive use in general, and condom use in particular to prevent the transmission of sexually transmitted diseases. Knowledge, attitudes, educational aspirations, use of drugs and alcohol, influence of peers and parents, and self efficacy have been some of the factors found to be associated with contraceptive use and what has come to be called "safer sex behavior."

Knowledge

In order to protect themselves from unwanted pregnancy, STDs and HIV adolescents must first be aware of the hazards, the need for protection, and specific measures they can take to lessen the risk of contracting a STD or conceiving a child. This means that adolescents need access to comprehensive sex education. However, although premarital sex among teens is not an issue in other cultures it is a sensitive topic in North America leading to controversy about how much sex education adolescents should have, what behavioral standards should be endorsed, and who should provide education. According to Martin (1990), and Gibbs (1993), sex is a difficult topic to discuss in American culture, especially when the discussions include such culturally sensitive topics as homosexuality, condoms, and premarital sex. According to Martin (1990) some federal funding in the United States has been denied to some programs who do not follow specific religious ideological guidelines in educating adolescents about AIDS. It is the position of some groups in North America that the sexual education of adolescents should focus on encouraging them to abstain from engaging in sexual behavior. This is touted as a prevention measure for unwanted pregnancies and HIV. There have even been government supported programs in the United States encouraging abstinence, however, Warren (1992) notes that this approach has not been taken by any of the countries with low adolescent pregnancy and abortion rates. In addition, given the ten to fifteen year delay between physical sexual maturity and the average age at marriage in the United States, an expectation of abstinence seems "Draconian" (Warren, 1992). Others have noted that as the age of physical sexual maturity has dropped and the average age at marriage has risen, increased sexual activity among adolescents almost seems inevitable (Gibbs, 1993). Warren (1992) also points out the enormous discrepancy between an expectation of abstinence for adolescents and the thousands of scenes of sexual activity or innuendo the average adolescent is estimated to view in the mass media in a year. This estimate has been as high as 14,000 according to the Center for Populations Options (Gibbs, 1993).

In examining cross cultural studies of teen pregnancy, Warren (1992) discovered that teenagers in the United States do not have a higher rate of sexual activity that would account for the high American teen pregnancy rates and neither do other countries lower their birthrates by a greater use of abortion. He found that countries that provide free or subsidized contraception do not have higher levels of sexual activity but do have much lower pregnancy and abortion rates. Such rates are also lower in countries that require or encourage sex education in schools. Some people believe that placing

a societal value on virginity would lower pregnancy rates, however, in Scandinavian countries where premarital sexuality is not a social issue, adolescent pregnancy rates have been consistently lower than those in the United States. It has also been argued that adolescents are too immature to effectively use contraception, however, in many countries female adolescents become sexually active earlier than American girls and yet their pregnancy rates are much lower. Others believe that a return to religious values would decrease the number of adolescent pregnancies, however, in countries where individuals profess less religious beliefs pregnancy rates are lower (Warren, 1992).

In Canada our teen pregnancy rates are 3rd highest among industrialized nations (Warren, 1992) suggesting that we may have our own difficulties in communicating about sexuality with our adolescents. Certainly, issues of homosexuality, premarital sexual intercourse, and the use of contraception including condoms, are sensitive ones among various religious and cultural groups in this country. However the presence of a sexually transmitted disease in our society which decreases life expectancy and for which there is no cure or vaccine in particular leads to some very important questions about sex education. We know that a sizable proportion of adolescents in North America are sexually active and that many do not use condoms. We must ask, do adolescents know basic facts about the transmission of HIV? Do they know how to lessen the risk of transmission by eliminating or modifying high risk behaviors? If they are in possession of this information do they then practice "safer sex" behaviors?

With the lack of either a vaccine or a cure for AIDS, education has been viewed as an important tool for the prevention of the spread of HIV. It has been recommended that methods of education be diverse and take many forms, drawing support from many sources particularly in attempts to reach adolescents (Institute of Medicine, 1986; de Neergaard, L., 1988). But does knowledge equal behavior change? While this concern is highly salient because of HIV it is also pertinent to the issues of adolescent pregnancy and adolescent STD rates in general.

Knowledge and Behavior

Research conducted in the late 1980's and early 1990's suggests that while sex education has been quite successful in teaching adolescents the facts regarding HIV, and it's transmission, possessing the facts has not effected the prophylactic behavior of teenagers to the degree that had been hoped.

The National Research Council, (1990) in the United States goes so far as to say that as a result of research sponsored by Centers for Disease Control in 1988, it can be assumed that adolescents are aware of the possibility of contracting HIV through sexual contact. Adolescents between the ages of 13 and 18 were surveyed and it was found that the majority of them, between 88.3% and 98.1%, knew that HIV can be transmitted through sexual intercourse. While Hall (1986) found that the quite sexually active 14-16 year old female research participants in her study had very little sexual knowledge, recent studies have consistently demonstrated that adolescents do know the transmission routes for AIDS apart from whether or not they choose to modify their sexual behavior and take preventative steps to avoid contracting the virus.

Unfortunately it appears that adolescents are not putting their knowledge of AIDS and its transmission into use in protecting themselves. Neither Kegeles et al 1989 (paper presented at the Vth International AIDS Conference) nor Rickert, Jay, Gottlieb, and Bridges, (1989) found an association between knowledge that condom use prevents transmission of sexually transmitted diseases and the use of condoms. This holds true even for older adolescents such as those in college. Strader and Beaman, (1989) found that although 96% of their college sample knew that condom use lowers the risk of HIV transmission only 40% of those who were sexually experienced had ever used a condom. Baldwin and Baldwin (1988) also found in spite of high levels of knowledge about AIDS among sexually active college students, only 13% indicated that they always use condoms and 66% reported that they never used condoms. Condom use was not associated with knowledge about HIV transmission, perceived risk of contracting AIDS, or worry about contracting AIDS. Even in areas where AIDS is known to be present to a significant degree, adolescents do not appear to be adopting preventive strategies. Walter, et al. (1992) surveyed grade ten students from a New York City borough considered to be an AIDS epicenter, and found approximately 5% of both genders were engaging in intercourse with one or more high risk partners with no or inconsistent condom use.

Similar results were found in a large national study of adolescents in Canada (King et al., 1988). General knowledge about AIDS improved with age for youth school but not for dropouts or street youth and the percentage of correct responses varied widely for individual items within age groups. For example, while 92.6% of college/university students knew that there is a blood test that can indicate if a person has been infected with AIDS, only 39.1% knew that the AIDS virus is now called the human immunodeficiency virus. With regards to transmission at least 89% of respondents from

grade 7 through university knew that AIDS can be transmitted through sexual intercourse, and virtually all respondents knew that having many sexual partners increases the risk of contracting the AIDS virus. With regards to protection, students were less knowledgeable, only 58% of grade 11 students and college/university students knew that a condom used in conjunction with a spermicide gives effective protection against the AIDS virus and less than half of both groups knew that Vaseline is not a good lubricant to use with condoms. Although slightly more than half of grade 11 and college/university students knew that use of a condom reduces the risk of contracting the AIDS virus, only 27.6% of sexually active males and even fewer females at 17% reported always using a condom. Twenty-nine percent of females and 23.4% of males reported never using a condom. The remaining students were inconsistent in their condom use.

However, findings were somewhat more positive in a 1992 survey of high school students in British Columbia conducted by Tonkin and his colleagues (1994). From grades 8 through 12 the proportion of students indicating that they had been taught about AIDS rose from 86 to 91 percent. In comparing their results to those of a large American study, Tonkin et al., (1994) state that condom use is greater among B.C. high school students than among their American counterparts. Sixty-four percent of sexually active males and 53% of sexually active females stated they used a condom the last time they engaged in sexual intercourse although condom use declined as grade level increased.

Thus, while evidence indicates that adolescents know the risk behaviors that increase the likelihood of contracting HIV, a large proportion continues to fail to protect themselves. In light of this circumstance, Botvin and Dusenbury (1992) noted that the history of substance abuse prevention and adolescent pregnancy prevention are similar in that in both cases programs that focused exclusively on information did not produce behavior change. Melton (1988) sums up the situation by stating that in AIDS prevention it has become apparent that education is necessary for behavior change but not sufficient. The same point could also be made for sex education and the prevention of pregnancy and STDs. This being the case it becomes important to discover what factors influence adolescents to make use of the information they possess about pregnancy, STDs and HIV to protect themselves.

Adolescent Attitudes

An examination of adolescent attitudes towards using contraception to protect themselves from pregnancy, may also be useful in attempting to understand why adolescents fail to use condoms to

protect themselves from disease. In addition to general attitudes some researchers have also looked toward feelings of guilt and knowledge of unplanned pregnancies as factors possibly influencing the use of contraception.

When asked, high-school students report numerous reasons for not using contraception including discomfort in obtaining contraception and impulsive sexual activity. In a recent survey (Leland and Barth, 1992) 20.5% reported being uncomfortable in obtaining birth control, 34.4% stated there was no contraception available at the time, 8.3% indicated ignorance as being a factor in nonuse, 9.2% reported embarrassment as influential in nonuse, 13% stated that contraception spoils sex, 14.8% felt they were not at risk, and a large portion indicated that the circumstance of sex being unplanned was influential in their contraceptive behavior. Finally, 11.6% indicated that their partner resisted using birth control, and 23.4% indicated that they had some unspecified "other" reason for not using a contraceptive. Girls were significantly more likely to endorse discomfort in obtaining contraception, ignorance, and an unspecified "other" reason as being influential in their failure to use contraception. Boys were significantly more likely to indicate that they failed to use contraception because their partner resisted its use. The reasons for this last difference is not clear leaving room for speculation that perhaps girls do not like to use condoms, or perhaps boys are shifting responsibility to the female to go on oral contraceptives which may be difficult for girls who are significantly more likely to endorse discomfort in obtaining birth control as a reason for nonuse. According to Melton (1988) beliefs and attitudes about condoms that interfere with their use include beliefs that condoms are uncomfortable, embarrassing to purchase, nonerotic, and indicate promiscuity.

Feelings of guilt and knowledge of cases of unplanned pregnancies among peers have also been examined as possible influencing factors regarding the use of contraception. Strassberg and Mahoney (1988) surveyed 147 sexually active older adolescents and young adults attending college regarding their use of contraception, level of guilt about sexual behavior, and knowledge of particular cases of unwanted pregnancy. The researchers found that individuals using an effective means of contraception reported significantly less guilt about intercourse than persons who used an ineffective means of contraception or none at all. Surprisingly, statistical analysis indicated that the link between sex guilt and contraceptive use was unaffected when the possibility of pregnancy was removed. Strassberg and Mahoney concluded that research participants who felt guilty failed to use contraception because it would indicate that the sexual behavior was planned and they would have to bear greater responsibility

for it than if such behavior occurred on the spur of the moment without premeditation. Strassberg and Mahoney also found that although the modal number of known unplanned pregnancies of others was "4 or more" (p. 535) among their research participants, this did not appear to motivate college students to use contraception. While this result was unexpected, surprise arose from the assumption that both younger and older adolescents wish to avoid pregnancy. Twenty-three percent of sexually active adolescents in survey of Strunin and Hingson (1992) stated that they would be happy if they became pregnant or caused their partner to become pregnant (twice as many males as females). Strunin and Hingson point out that the desire for pregnancy may mitigate against use of contraception including condoms.

More specifically, with regards to condom use Fishbein (1990) reports that male university students in the USA and Mexico are concerned about preventing pregnancy and STD's including AIDS, but consider other things such as interrupting the sex act, dulling sensation, making sex less intimate, if intercourse will be prolonged, if it is embarrassing, if it is necessary, and if it shows respect for their partner, when deciding whether or not they will use a condom. Boyd and Wandersman (1991) found similar attitudes about using condoms among undergraduates as well as concerns regarding expense, ease of use, convenience, and the possible interruption of romance. In a study of female university students only, Chan and Fishbein (1993) found very similar concerns about telling a partner to always use a condom but with a greater focus on the partner. These women indicated they were concerned about decreasing their partners' pleasure as well as their own, making their partners angry, losing the trust of their partners, causing conflicts with their partners, making their partners think that they have sex frequently, as well as doing the responsible thing, showing their partners that they care about themselves, and protecting themselves from pregnancy and disease. Depending on the study some of these beliefs about the possible outcomes of condom use have been found to differentiate between those who intend to use a condom or tell their partner to use a condom and those who do not.

Adolescent Educational Aspirations

Educational aspirations appear to be an important factor in motivation to use contraception for some women. As reported in Morrison (1985), Shah and colleagues found in 1975 that as educational goals increased so did the likelihood of contraception use. They reported that while 7% of those not planning to finish high school reported always using contraception, 23% of those planning to attend graduate school used some form of birth control. In a study by Herold and Samson (1980) women who

intended to go to college were twice as likely to go to a contraception clinic prior to becoming sexually active than those not intending to go to college. While the relationship is interesting there are a large proportion of women with high educational aspirations who are not reporting contraceptive use.

Drugs and Alcohol

While IV drug use has been noted as a risk factor for transmission of HIV, other recreational drugs and alcohol have been found among homosexual men to be associated with the failure to adopt safe sex practices in high risk situations (Stall et al., 1986). Strunin and Hingson (1992) interviewed 1,152 adolescents, ranging from 16-19 years old, in a randomized telephone survey in Massachusetts. Forty-nine percent of the research participants stated that they were more likely to have sex if they and their partner had been drinking alcohol and 32% reported being more likely to have sex if they had been engaging in drug use with their partner. Although 37% of research participants reported always using condoms, 17% stated they used condoms less frequently after drinking, and 10% reported using them less often after using drugs. In the Adolescent Health Survey conducted in B.C. in 1992 (Tonkin et al., 1994), 28% of sexually active males and 23% of sexually active females reported having used drugs or alcohol prior sexual intercourse the last time. Being under the influence of drugs or alcohol was also one of the reasons for becoming sexually active given by a survey of pregnant teens completed by McCullough and Scherman (1991). Strunin and Hingson (1992) are careful to point out that because only a third of adolescents consistently use condoms anyway, it is the increased likelihood of sexual intercourse after drinking or using drugs that leads to an increased risk, of unwanted pregnancy and STDs including HIV, rather than the decrease in likelihood of condom use.

Even among adolescents with good intentions who do sometimes use condoms in other circumstances, the disinhibiting effects of alcohol and other psychoactive substances can interfere with the ability to make the well reasoned decisions that are relevant to safer sex behavior according to psychological models such as the Health Belief Model, the Theory of Reasoned Action, and Social Learning Theory (Strunin and Hingson, 1992). The effects of drugs or alcohol on a potential partner can also change the nature of the interpersonal communication and interaction necessary to negotiate condom use. A partner under the influence of a psychoactive substance may appear less open to persuasion or may wish to avoid further diminishment of the reduced physical responsiveness that results from larger amounts or chronic use of alcohol (Strunin and Hingson, 1992). Finally, despite

their concerns regarding STD's, HIV, and unwanted pregnancies, adolescents in the study by Strunin and Hingson (1992) were more likely to have unprotected sex if they had been drinking or using drugs.

Peers

Individuation from parents and movement toward greater independence is an important task in adolescence and the role of peers has been studied as a potentially influential factor in the development of sexual attitudes, behavior, and use of contraception during this time. Adolescent perceptions of their peers attitudes and behaviors have been considered both from the perspective of perceived group norms and the concept of the pressure to conform to these group norms. For some adolescents, peers are an important source of information about sexual matters, however this has been differentiated from preferred sources of information. The influence of peers on the development of adolescent sexual attitudes and behavior does not appear to be any more direct than that of parents. The relative importance of perceived peer attitudes and behavior has been found to depend in part on the gender of the adolescent whose attitudes and behavior are being measured as well as their virginity status, and the emotional climate of their family.

Leland and Barth (1992) asked teens about their perceptions of the sexual behavior of their peers. The results were interesting, however, there was no clear indication of if, or how, these perceptions affected respondents' own birth control behavior and choices. Thirty percent of girls and 21.5% of boys thought that most of their peers were having sexual intercourse while only 15.4% of girls and 9.2% of boys thought most of their peers were using contraception. If these perceptions are considered to be perceived group norms then they may influence the individuals own contraceptive behavior. According to Melton (1988), adolescent sexual behavior is associated with perceived peer group norms and these norms can account for greater variance in behavior than cognitive variables. It was also pointed out that because engaging in sex is an interpersonal activity adolescents need to have adequate communication and assertion skills in order to arrange for safer sex with their partners. Discussing past sexual experiences and the desire for "safer sex" measures is likely to be embarrassing to adolescents and they are likely to fear rejection as a result of raising these issues. In a survey of 37 14-19 year old pregnant teens McCullough & Scherman (1991), found that peer pressure was the second most influential reason for the initiation of sexual activity. Curiosity was the reason rated most influential in becoming sexually active, followed by peer pressure, the inability to say no, and being in

love. Alternatively, Hall (1986) did not find peer pressure, defined as the extent to which behavior is influenced by associates, to be significantly correlated with initiation of sexual activity.

A recent survey of American teens reported by Gibbs (1993) highlights the fact that peers can be an important source of information about sexual matters for some adolescents who may not be obtaining sex education elsewhere. Twenty-six percent of 13-15 year olds, and 37% of 16-17 year olds reported that they had "learned the most about sex" (p.51) from their friends. However, while peers may be an important source of information about sexual matters they are the preferred source of information regarding AIDS for few adolescents. King, M., et al (1988) discovered that fewer than 4% of grade 11 and college students reported that their friends were their preferred source of information about AIDS and indeed few students surveyed (5.8% of grade 11's, and 5.9% of college students) reported that their friends were their main source of information about AIDS.

The 17 to 20 year old college students surveyed by Moore and Rosenthal (1991) indicated that they perceived their friends to be more accepting of sexual behavior than their parents and more willing to discuss contraception and AIDS prevention but a considerable number had not discussed AIDS precautions or risk with their friends. Female adolescents also perceived more disapproving attitudes among their friends than did the males. They were much more likely to discuss sex with their friends than their male counterparts however, and they were somewhat more likely to discuss precautions. Females in ongoing relationships were positively influenced by discussions with friends about AIDS precautions, unlike the males in the study.

Sexual behavior and attitudes about sexuality, along a dimension of erotophilia - erotophobia, were found for undergraduate females to correlate with the perceived attitudes of peers but not those of parents or church (Daugherty and Burger, 1984). However for males general sexual attitudes and some behaviors were found to be correlated with perceived attitudes of their parents but not those of their peers or church. For males age of first coitus was related to peers attitudes but number of partners was related to perceived attitudes of parents. Attitudes of peers were not found to be related to the use of contraception for males or females although the researchers believe their measure of contraception use may have been problematic. They speculated that their results may be explained by a double standard for sexual behavior where sons take on their parents attitudes because they are not as

disapproving for sons as they are for daughters. They further speculate that perhaps males don't develop close friendships that allow for discussion of sexual matters with peers.

Treboux and Busch-Rossnagel, (1990) examined the influence of two major socializing influences, peers and parents, on adolescent sexual knowledge, attitudes, and behavior. They found that for female virgins discussion with parents, parental approval of sexual behavior, discussion with friends, and friends approval of sexual behavior all influenced premarital sexual attitudes which in turn influenced sexual behavior and contraceptive knowledge. For male virgins, as with female virgins, all four social network variables were related to premarital sexual attitudes and were thus indirectly related to behavior. Discussions with parents had a direct effect on sexual behavior, however, the only influence on contraceptive knowledge was friends' approval. For males, regardless of virginity status, parents appeared to be more influential than peers in determining sexual attitudes and behaviors. For female virgins friends were more influential. For female nonvirgins discussion with parents and friends was not found to be influential on their attitudes or behavior.

Following a longitudinal study into the effects of parental warmth and support as it relates to the development of the sexual attitudes and behavior of adolescent girls, Whitbeck, Conger, and Kao, (1993) concluded nonsupportive parents can potentiate the influence of peers around issues of sexuality. Having emotionally distant parents was associated with feelings of depression and low self worth as well as desire for close relationships outside the family, including sexual ones. Such desires fostered more permissive attitudes about premarital sexuality among the girls who then began to associate with peers who held similar beliefs, some of whom were sexually experienced. At one year follow up the sexual behavior of adolescent girls with emotionally distant parents was best predicted by their beliefs about their peers behavior the previous year.

It seems that peers can be an important source of information about sexual matters in general as well as AIDS prevention and they have been viewed as more accepting than parents of sexual behavior on the part of adolescents. Further, although females view their peers as being more disapproving of sexual behavior than males do, some research indicates peers remain an important influence on the sexual attitudes and behavior of young women. This relationship appears to be further potentiated by emotional distance from parents. Males, however, seem to be less influenced by their peers.

Parents

In the past it has been assumed that parents do not wish their adolescents to become sexually active, however, while that may no longer be the case for all parents (Jaccard and Dittus, 1991) it can be generally assumed that most parents do not want their adolescent to experience the negative consequences of an early, unplanned pregnancy or a sexually transmitted disease. Toward that end it seems likely that as a chief socializing agent of their children, parents will attempt to pass on their values about sexual behavior to their adolescents. Early investigations into parental sex education of teenagers produced conflicting results. This is not surprising given that recent work in the area suggests that the transmission of parental values regarding sexual behavior is influenced by a variety of factors. Studies which found a relationship between parental sex education and the sexual behavior of adolescents suggest that parents do discuss sexual matters with their adolescents and that their teenagers do find them to be an important and desirable source of information. It appears that parental influence in sexual matters such as initiation of intercourse and use of contraception and condoms depends on a number of factors including the age and gender of the adolescent, the gender and orientation of the parent, as well as the content and extent of discussions, and emotional climate of the family

Early Research Regarding Parental Influence on Adolescent Use of Contraception

Research into parent variables and adolescent use of contraception from the 1970's to the mid 1980's produced conflicting results (Morrison, 1985). There were studies such as those by Furstenberg (1971) and Fox and Inazu (1980) that indicated that use of contraception was greater among young women who had discussed sex and birth control with their mothers than among those who had had no such discussion. Herold and Samson (1980) also reported that the young women in their study who used contraception at their first intercourse were more likely to have discussed the subject with their parents. Research by Lewis (1973) suggested that parental communication also influences adolescents in the area of abstinence. Other researchers have found a relationship for one gender but not the other. At times the gender of the adolescent has been held constant and the relationship with the parent of a particular gender was found to be predictive (Jaccard and Dittus, 1991)

However, some studies conducted in the 1970's, such as those by De-Lameter and MacCorquodale (1978) and Reiss, Banwart, and Foreman, (1975), failed to find a connection between discussions with parents and contraceptive use by college students. Other studies that have failed to find a relationship include those by Furstenberg, Herceg-Baron, Shea and Webb, (1984) in which mother-daughter communication about sex and contraception was not more likely to lead to use of contraception, and Newcomer and Udry (1985) in which parental attitudes about premarital sex and parent-child communication about sex and contraception did not appear to influence adolescent sexual and contraceptive behavior. According to Morrison (1985), one line of research in the early 1980's speculated that if parents were accepting of adolescents' sexual activity then the adolescent would be more likely to use contraception. However, at that time no evidence was found to support this contention. During that period a variety of other studies looking into such variables as satisfaction with family relationships also failed to produce promising results (Morrison, 1985)

Recent Research Regarding parental Influence on Adolescent Use of Contraception

Following a review of the literature, Morrison (1985) concluded that there was little research support for the conception that parents are influential in the area of adolescent sexual behavior and use of birth control. And in 1991, following their own review of the literature, Jaccard and Dittus reached a similar conclusion. They determined that empirical support for the idea that parents influence the sexual behavior of their adolescents was weak. However, they proposed that widespread methodological problems in research in this area could account for the contradictory results and small amount of variance accounted for. They noted the following problems. In their opinion a bias exists in research regarding parent adolescent communication about sex in that it almost always examined from the adolescents point of view. It is necessary for adolescents to have information however they must also be motivated to act upon it. They observed that most research fails to examine *what* parents say and do to motivate their adolescents to avoid pregnancy and it has been assumed that all parents share the same orientation toward premarital sex. As well, if parents are asked if discussions occurred it is assumed that the preferences and values of the parent have been conveyed. Measures and conceptualizations of communication process have generally been crude and researchers such as Daugherty, L. and Burger, J (1984) have themselves noted that their lack of findings of parental influence may have been due to the manner in which their sexual attitudes and behaviors were measured. Further, general variables of communication have been used in an attempt to predict specific sexual behaviors when research in the area of attitudes has demonstrated that in order to predict

specific behaviors, attitudes specific to that behavior need to be examined (Jaccard and Dittus, 1991). Therefore, according to Jaccard and Dittus, it is not surprising that such communication variables have been of little help in predicting specific sexual behaviors. In addition, linear and not multivariate models were being used for very complex behavior that is likely to have a variety of influences which is why studies have not been able to account for much variance. According to Jaccard and Dittus, if the quality of past research is taken into account a conclusion regarding parental influence seems premature. Certainly regardless of equivocal research results in the 1970's and '80's researchers continue to be concerned about reducing the high rate of adolescent pregnancy and sexually transmitted diseases in North America, and parents continue to be concerned about influencing the sexual and contraceptive behavior of their adolescents.

Parents as a Source of Information About Sex and AIDS

The literature indicates that when asked to report if they have discussed sexual matters with their parents between 30% and 60% of adolescents indicate that they have done so (Jaccard and Dittus, 1991). However, this may be an underestimate as many studies asked teens to cite their major or most useful sources of information on sexual matters. In a recent survey of American teens (Gibbs, 1993), it was discovered that younger adolescents, 13-15 year olds, were more likely to report that they had "learned the most about sex" (p.51) from their parents (30%), than 16-17 year olds (22%).

Other research has indicated that some sexual matters are more likely to be discussed with adolescents than others (Leland and Barth, 1992). While 61.9% of adolescents reported that their parents had discussed pregnancy with them only 38.6% reported having a discussion about birth control with their parents. More than half, 54.6%, of the adolescents reported that their parents had talked to them about abstinence. Approximately half of the adolescents indicated that their parents talked to them about STD's but there was no indication whether or not parents had discussed AIDS in particular, or strategies for specifically avoiding HIV infection. Fewer parents discussed STDs than pregnancy.

Ninety-eight percent of the Canadian parents surveyed by Verby and Herold (1992) agreed that adolescents should be taught about AIDS at school but relatively little is known about the proportion of parents who themselves talk to their off-spring about AIDS. Tonkin et al (1994) who reported a high level of condom use among B.C. high school students compared to other studies of adolescents,

also reported that by grade twelve 91% had been taught about AIDS at school and 50% of students surveyed indicated that their parents had talked to them about AIDS.

Preferred Sources of Information

In a Canadian study conducted by King, Coles, and King, (1988), grade 9, 11, and college/university students demonstrated a high degree of consensus in reporting their preferred sources of information. Their preferred source of information about sex and contraception was from family members, especially their mother, however, their preferred source of information about sexually transmitted diseases was school. Regarding education about sex in general, approximately half of college/university students and 36.4% of grade 11's reported that their mother was either their preferred main or secondary source of information. With regards to information about contraception the figure were 30.3% of grade 11's and 40.6% of college/university students preferred to be educated by their mother. Fathers were the preferred main or secondary source of information about sex for 15.9% of grade 11's and 20.9% of students in college or university. With regards to birth control, he was the preferred source of information for 8.2% of grade 11 students and 10.7% of college students. For some adolescents, 7.8% of grade 11's and 8.6% of college students, family members other than parents were the preferred source of information about sex.

There was disagreement among students of different ages about preferred main or secondary sources of information about AIDS. Grade 9 students preferred to learn about AIDS in school and grade 11 (38.3%) and college/university students (40.6%) predominantly selected their doctor as their first choice for informing them about AIDS. Among college/university students, parents and other family members fell below doctors, school, television and print forms of communication as a preferred source of information about AIDS. It appears that adolescents lack confidence in their parents' knowledge in this area. Almost 59% of grade 9's and 72.3% of grade 11's endorsed a statement that "many parents do not know enough about AIDS".

Age of Adolescent

In a study regarding parental influence on the sexual attitudes of adolescents of varying ages, Fisher (1986) found that early adolescents tended to share their parents sexual attitudes but that this was not true for middle adolescents. Middle adolescents from both high and low communication families held attitudes that were highly divergent from those of their parents. Furthermore they held

significantly more permissive attitudes than both younger and older adolescents. Fisher hypothesized that this may be due to the greater conformity to peers and greater tendency to devalue conventional norms that occurs at this age. Eighteen to twenty year olds were the only group to report attitudes similar to those of their parents solely as function of amount of discussion about sex ever and whether certain topics had been discussed. Interestingly, parents' reports of discussion of certain topics was not always echoed by their children. It could be that parents felt it was socially desirable to report some things, or that their children forgot discussions that occurred at a younger age. It is also possible that while parents may have made admonishments about certain topics, their children did not view these as discussions and did not report them as such. Fisher suggests that parents can influence their children's attitudes about sex although it may not be apparent until later

Gender of Adolescent

The gender of the adolescent seems to influence sex education in a number of ways. Parents are more likely to discuss certain topics with daughters than sons, and vice versa, and further, parents are more likely to discuss sexual topics with children that share their own gender. Some studies have found that adolescent females tend to be more influenced by their peers while their male counterparts are influenced by their parents to a greater degree in some matters. It is the perception of adolescents that parents are more approving, or less disapproving of sexual behavior among male than female adolescents.

Leland and Barth (1992) surveyed adolescents regarding whether or not their parents had discussed a variety of sexual issues with them. They discovered that parents were significantly more likely to discuss pregnancy with girls, at 70.5% than for boys at 53.7%. Girls were also significantly more likely to have had a discussion about contraception with their parents than were their male counterparts, although less than half of the parents of female research participants, 44.8% discussed birth control with them. While there was no significant difference between males and females on the number of adolescents whose parents had discussed sexually transmitted diseases with them, significantly more girls (65.5%) than boys reported that their parents had discussed abstinence with them. In a study by Jaccard and Dittus (1991) parents were significantly more likely to discuss sexual issues with their daughters pertaining to the emotional consequences of a sexual relationship, losing respect from others, the immorality of not waiting until marriage, and the virtues of virginity. They were more likely to talk to their sons about the possibility of contracting a sexually transmitted disease

It has also been found (Moore, and Rosenthal, 1991) that mothers are more likely to have discussions with daughters and fathers with their sons, however, even at lower levels of communication mothers were more encouraging of the adoption of precautions against AIDS among their sons than their daughters. It appears that the approval or at least acceptance of sexual behavior among sons also influences safer sex education. Some studies have indicated that it makes a difference which parent does the educating about safe sex. Male adolescents in the Moore and Rosenthal study whose fathers actively discussed sex education and precautions against AIDS with them engaged in safer sex behavior. Baker, Thalberg, and Morrison, (1988) also found that same gender parents were most influential in encouraging adolescents to use contraception.

Some studies have indicated that male adolescents are more influenced by their parents' views about some sexual matters than are female adolescents. For example, Daugherty, and Burger, (1984) found that the sexual attitudes of female undergraduates, measured along a dimension of erotophilia-erotophobia, were correlated with the perceived attitudes of their peers but not their parents. The sexual attitudes of male undergraduates, measured in the same way, and some of their sexual behaviors were found to correlate with the perceived attitudes of their parents but not those of their peers. For males, age of first coitus was related to peers' attitudes but number of partners was related to perceived attitudes of parents.

Researchers such as Moore, S. and Rosenthal, D. (1991) and Darling and Hicks (1982) have found that in general young male college students perceive more approval or less disapproval from mothers, fathers, and friends than do their female counterparts who perceive more disapproval from parents and friends.

Virginity Status of Adolescent and Parental Influence

Treboux, and Busch-Rossnagel, (1990) found that for female virgins discussion with parents, parental approval of sexual behavior, discussion with friends, and friends' approval of sexual behavior influenced premarital sexual attitudes which in turn indirectly effected sexual behavior. Although Leland and Barth (1992) found that female virgins were more likely than other adolescents to express a concern regarding their parents wishes and values surrounding adolescent intercourse, Treboux and his colleague report that they found male virgins to also be influenced by their parents' opinions. Among male virgins approval of parents and peers influenced premarital sexual attitudes which indirectly

effected behavior. Discussions with parents however, were found to directly effect the behavior of male virgins. For nonvirgins, both male and female, only social network approval influenced premarital sexual attitudes which indirectly effected sexual behavior. Parents appeared to be more influential than peers in determining the sexual attitudes and behaviors of their sons, regardless of their virginity status (Treboux, & Busch-Rossnagel, 1990) Friends have been found to be more influential than parents for female virgins but neither parents nor friends were found to be significantly influential on the attitudes or behavior of female nonvirgins (Treboux, & Busch-Rossnagel, 1990)

Influence of Parent Attitudes on Adolescent Initiation of Sexual Intercourse

Findings regarding the possibility of parental attitudes influencing adolescents to abstain from or delay the initiation of sexual intercourse have been mixed. While Lewis (1973) reports some evidence to suggest that parental communication does influence adolescents in the area of abstinence, and more recently, Leland and Barth (1992) found that approximately 25% of abstaining adolescents in their study cited their parents wishes as being part of their decision not to have sex, other research has provided limited or no support for the influence of parents in this area. In a clustered sample household survey of 14-17 year old male and female adolescents and their parents by Baker, et al. (1988), parents' normative beliefs had a limited effect on adolescent's decision to become sexually active. Attitudes about sexuality, measured along a dimension of erotophilia-erotophobia, and the sexual behaviors of female university students were found to correlate with the perceived attitudes of peers but not those of their parents or church by Daugherty, L., and Burger, J., (1984). However, for male university students general sexual attitudes and some behaviors were found to be correlated with perceived attitudes of their parents but not those of their peers or church. Age of initiation of sexual intercourse was related to peers attitudes and not to parents', but number of partners was related to perceived attitudes of parents (Daugherty, L., and Burger, J., 1984). Baker, et al. (1988) found that children of parents with a liberal attitude toward sexual behavior were slightly more likely to be sexually active but considerably more likely to use contraception.

Parent Communication and Adolescent Use of Prophylactics

In a survey of college students aged 17 to 20, Moore, S. and Rosenthal, D. (1991) found that there were low levels of perceived parent approval of adolescent sexual behavior as well as little discussion with parents of contraception and AIDS prevention. In addition parents rarely assisted their adolescents in acquiring contraception or condoms. Mothers were more likely to have discussions with

daughters and fathers with their sons, however, even at lower levels of communication mothers were more encouraging of the adoption of precautions against AIDS among their sons than their daughters. Adolescents living at home took fewer risks with their regular partners than adolescents living away from their parents, independent of perceived parental approval or disapproval. The only parent with a clear positive influence was the father on his son. Males whose fathers actively discussed sex education and precautions against AIDS engaged in safer sex behavior. For females, increased discussions about AIDS precautions with friends lead to an increased likelihood to engage in condom use.

Baker, et al. (1988) completed a clustered sample household survey 14-17 year old male and female adolescents and their parents. Their results indicated that while parents' normative beliefs had a limited effect on adolescent's decision to become sexually active they exerted a strong impact on later contraceptive use. Same gender parents were most influential. Attitudes of both parents are influential in the use of contraception at first intercourse but only the mothers attitudes are influential in use of contraception at most recent intercourse. Children of parents with a liberal attitude toward sexual behavior were slightly more likely to be sexually active but considerably more likely to use contraception. In fact parental approval of one's own adolescent's sexual behavior was the strongest predictor of adolescent use of contraception. Baker and colleagues suggest that less guilt equals clearer thinking. In their opinion contradictory results in earlier research resulted from the failure to take into account developmental differences in the weight of peer and parent influences for younger and older adolescents and also from issues related to sampling. Nonsexually active adolescents were included in the sample and parents were asked directly about their opinions.

Fisher, (1988) reported that in a study of college students, individuals from families with a high level of communication about sex were much more likely to have attitudes about sex similar to those of their parents regardless of whether or not they had moved away from home or were still living with their parents. They were not however, any more likely to use contraception than students from low communication families. However, no analyses were reported regarding the extent or content of sexual communication about contraception specifically and its relation to contraception use. Perhaps high communication families were not significantly more likely to talk about the specifics of birth control.

Effect of Emotional Climate of Family on Adolescent Sexual Attitudes and Behavior

It has been hypothesized that poor self image or low self esteem may propel adolescents into experimenting with sex. According to Simons, Robertson, and Downs (1989), parental rejection in either the form of neglect or outright rejection is causally related to juvenile delinquency and has been demonstrated to be a better predictor of deviant behavior in adolescence than family conflict, parental control, family organization and family religiosity. Parental rejection may lead to the need to bolster self worth through contracting relationships outside the family including sexualized ones (McCullough & Scherman, 1991). In an effort to empirically test this hypothesis Whitbeck, et al. (1993) conducted a longitudinal study into the effects of parental warmth and supportiveness as it related to adolescent girls' depressed affect, sexual attitudes, peer influence, and sexual experience. They concluded that parental effects on the coital behavior of adolescent girls could be indirect. That is, having emotionally distant parents was associated with feelings of depression and low self worth as well as desire for close relationships outside the family, including sexual ones. Such desires fostered more permissive attitudes about premarital sexuality among the girls who then began to associate with a peer group that shared similar attitudes and included girls who were sexually experienced. At the one year follow up the sexual behavior of the adolescent girls was best predicted by their beliefs about their peers' behavior the previous year. Whitbeck and colleagues concluded that nonsupportive parents can potentiate the influence of peers around issues of sexuality.

Level of Communication

There is intuitive appeal to the idea that the more communication there is between a parent and child about sexual matters, the greater the chance that the adolescent will be influenced by the parent's orientation. Research has supported this notion.

In a 1988 study of college students, Fisher reported that individuals from families with a high level of communication about sex were much more likely to have attitudes about sex similar to those of their parents regardless of whether or not they had moved away from home or were still living with their parents. Communication level was scored through the combination of number of topics and extent of discussion about each topic to yield a single score. Jaccard and Dittus (1991) also found that parental orientation had little influence on adolescent behavior when there was little discussion, however, as the extent of discussion increased so to did the amount of shared attitudes between

mothers and children but not fathers. These authors emphasize the importance of the orientation of the parents when examining the extent of communication, as communication can be extensive but vary in content from parent to parent.

Warren (1992) states that according to his research less than 10% of families engage in *ongoing* communication regarding human sexuality. Perhaps when combined with research by Fisher (1988), and Jaccard and Dittus (1991), it can act as a partial explanation for why some studies find little relationship between the sexual attitudes of adolescents and their parents. It may be that parents attempt to pass on their values about sexuality on one or two discrete occasions when they teach the facts about sexuality rather than continue to present their values to their adolescents at different times and in different ways as the adolescent matures.

Parental Orientation

A parent's orientation refers to their degree of approval or disapproval of premarital sex on the part of adolescents. Much research in the area has assumed that parents wish to dissuade their teenagers from engaging in sexual intercourse. However, research by Jaccard and Dittus (1991) suggests that this is not always the case. It has also been found that the gender of a parent is associated with orientation toward adolescent sexual behavior, as is the gender of the adolescent involved. The best predictor of parental orientation has been their moral view of premarital sexual intercourse. Beliefs about the risk of contracting sexually diseases including AIDS were uncorrelated with parental orientation although it was used as an argument to dissuade adolescents from engaging in sexual intercourse. Some strategies used to persuade adolescents to refrain from engaging in sexual intercourse were successful for sons but not daughters and different arguments or themes were used for sons and daughters.

Unlike most research in the area, Jaccard and Dittus (1991) focused their own research on parent-adolescent communication about sex from the parents' point of view. Parents were surveyed regarding variables pertaining to parent adolescent communication and their relationships with their teenager. Parents also indicated the perceived utility of, their agreement to, and whether or not they would use a certain argument to dissuade their child from having sex, and whether or not they had thought of it themselves. The adolescents of the family then responded to a survey regarding their

satisfaction with their communication with their parents in general, their sexual behavior and their use of contraception.

The data collected by Jaccard and Dittus (1991) suggests that parents are not uniformly against their adolescents engaging in sexual intercourse. Although most mothers and fathers felt that their adolescents should be discouraged from having intercourse, approximately 8% felt that there was no need to discourage their adolescent from engaging in sex. In a middle position, approximately 20% of parents indicated that although they thought that sexual intercourse on the part of their adolescents should be discouraged in general, one or two incidents of coitus with a steady boyfriend or girlfriend would be acceptable. In general, parents were more likely to discourage sexual intercourse on the part of their female children than their male children. Girls were more likely to have had extended discussions about sexual issues with their parents, and mothers were more likely to present points of view discouraging sexual intercourse, particularly to daughters.

Fathers and mothers generally used similar numbers of themes when talking to their adolescents, however, when mothers used or cited a greater number of themes in attempting to persuade their adolescent to adopt their (the mother's) orientation to premarital sex, it was an effective approach for sons but not for daughters. That is number of themes cited was significantly correlated with sons but only marginally so for daughters. The number of themes cited by fathers had no effect (Jaccard & Dittus, 1991)

Jaccard and Dittus (1991) did find maternal orientation toward premarital sex to be significantly related to adolescent behavior for males and females. That is, "the more the mother felt the teen should be discouraged, the less likely the teen was to engage in sex." (p.87). Fathers' orientation however, was unrelated to their teens sexual behavior. Interestingly, the correlation between mother and father orientations was .36 which is suggestive of only moderate agreement in their opinions about premarital sex.

The strongest predictors of the parents orientation toward adolescent intercourse was whether or not the parent believed that premarital sex is immoral and a second belief highly correlated with the first, that their child would feel guilty and sorry for not waiting for marriage. This was not the case in a study by Darling and Hicks (1982) in which no relationship was found between the sexual messages parents gave to their offspring and SES, parental background, or religiosity. Beliefs about the threat of

AIDS and venereal disease were uncorrelated with parental orientation, as was the Jaccard and Dittus' (1991) measure of parental control. This might be surprising to some as a concern regarding AIDS might be expected to influence whether or not parents think premarital sex among adolescents is acceptable, or how controlling they may be surrounding their adolescent's behavior. Correlations, however, were small for social and demographic factors associated with parental orientation, including age, gender, and education of parent, religiosity, political orientation, income and number of teenage children in family.

Although beliefs about the threat of disease was not correlated with parental orientation about premarital sex, Jaccard and Dittus (1991) found that in attempting to discourage their children from engaging in sexual intercourse parents talk most frequently about disease and the negative consequences of an unwanted pregnancy. In spite of the fact that the parents in Jaccard and Dittus study were highly likely to talk about disease when discouraging their adolescents from engaging in intercourse, at least half and probably more did not intend to recommend a particular form of birth control to their teen, even though the condom is known to be the most effective barrier against sexually transmitted diseases and HIV. Frequently raised issues, other than disease, included mature and responsible behavior, love versus lust, religious and moral issues, respect from others, and the virtues of virginity.

Content of Communication

It has been demonstrated that parents are more or less likely to discuss certain sexual matters depending on the gender of their adolescent, and utilize different themes in attempting to persuade their sons and daughters to adopt the parent's own orientation toward premarital sex. However what has been unclear has been if male and female adolescents each find different themes to be persuasive. Jaccard & Dittus (1991) reported that daughters seemed to find arguments about maintaining respect to be more influential in shaping their behavior, but that sons appeared to be influenced to a greater degree by arguments about disease and moral issues. Daughters were less likely to have engaged in sexual activity if they had mothers who utilized themes regarding the loss of respect from others resulting from premarital sex. Sons were less likely to have engaged in premarital intercourse if their mother had discussed the morality of it and the threat of disease.

The results of Jaccard and Dittus (1991) suggest that the relationship between characteristics of parental communication about sexual issues and adolescent sexual behavior may be more robust than previously concluded. Not only were parents found to influence their adolescents' behavior but the frequency and the content of communications found to be influential for daughters and sons were elucidated.

Self Efficacy

Bandura, (1990) notes that in the context of public health efforts to control the spread of AIDS infection it has been assumed that if people are aware of the threat of AIDS they will take the necessary precautions to avoid contracting HIV. However, while knowledge of risk must exist before self protective behaviors can occur, knowledge alone has not proven to be sufficient to induce behavioral change in habits detrimental to health. With regards to AIDS what is also necessary is the belief that one can exercise control in sexual situations and the skills to do so. Bandura terms this belief in one's personal power in any given situation "self-efficacy". More specifically, perceived self-efficacy is a person's belief that they have the capability to control their motivation, behavior, and social environment which effects what action they decide to take in a given situation, how long they will persevere with their behavior when problems occur and how much psychological distress they experience while engaging in the behavior. If a person has low self-efficacy, that is does not have a belief in their own abilities, then even if they have a knowledge of what they are supposed to do and some skill for the task, they will deal with the situation less well than someone who has a strong belief in their ability to use their skills. Bandura notes that there are elements of interpersonal situations that influence judgment. In sexual interpersonal situations the individual is influenced by fear of rejection, fear of embarrassment, coercive power, desire for social acceptance, and social pressures, as well as enticements to behave in unsafe ways (Bandura, 1990). Although Bandura, highlights the potential negative influences of such factors on those with low self-efficacy, elements of interpersonal situations such as desire for social acceptance and social pressures can act in a positive way as to support safer sex behaviors. According to J. Fisher (1988) pressures from the social network induce individuals to behave in a manner congruent with the norms of the social network which may or may not include taking precautions against AIDS. Fishbein et al. (1995) found that sexually active adults who reported less confidence in their ability to purchase condoms, that is they believed that they would be embarrassed, were significantly less likely to have reported always using a condom. Walter et al. (1992) observed bivariate associations between beliefs derived from the Health Belief Model and AIDS

risk behaviors among high school students in an AIDS epicenter. However, the relationships were potentiated in the presence of beliefs about norms, values, and self efficacy. They conclude that it is these factors that may have a greater effect on adolescent decisions to take precautions against AIDS.

Theoretical Approaches to Explaining AIDS Preventive Behavior

Current approaches to predicting and increasing AIDS preventive behaviors have been described by Lewis, and Kashima (1993) as being of three general types; intervention studies, descriptive surveys, and theory-based studies. In a critical review of the literature to date, they conclude that programs have in general been based on informal conceptualization with little or no program evaluation, and most literature is atheoretical and noncommulative. Further, methodological problems frequently make it difficult to draw comparisons or measure change. Therefore Lewis, & Kashima (1993) characterize much of the information about AIDS preventive behaviors and their determinants gathered to date as preliminary. While some research has been done with small numbers of theoretically-relevant variables, it too is vulnerable to criticisms of poor conceptualization, lack of a broad focus, and being noncommulative (Lewis & Kashima, 1993). The Health Belief Model and the Theory of Reasoned Action are two more integrated theories that have been applied to the prediction of other health related behaviors, and recently to the prediction of AIDS preventive behaviors. The Health Belief Model focuses on the perceptions of the individual regarding; 1) their susceptibility to contracting AIDS, 2) the severity of the disease; 3) the costs of performing a preventive behavior; and 4) the benefits of performing a preventive behavior. Although it has accounted for a small amount of variance in predicting AIDS preventive behaviors (Terry, Gallois and McCamish, 1993), a chief criticism of the Health Belief Model has been its failure to include social influences in predicting health related behavior (Lewis & Kashima, 1993; Terry, Gallois and McCamish, 1993). The Theory of Reasoned Action provides a coherent organization of many of the variables, including social influence, that have been found to relate to the sexual behavior of adolescents, and to be implicated in their performance of AIDS preventive behaviors.

The Theory of Reasoned Action

The Theory of Reasoned Action (TRA) was first introduced twenty-five years ago by Martin Fishbein and has been used to predict or explain wide variety of behaviors including voting, smoking marijuana, wearing safety belts and hard hats, condom use, and church attendance (Fishbein, 1993)

According to its author, the strength of theory and the reasons for its longevity are that: 1) it often explains a considerable and statistically significant amount of variance in behaviors and intentions; and 2) it is made up of a relatively small set of theoretically interrelated concepts which have been operationally defined (Fishbein, 1993). The central premise of the theory is that people make decisions based on a reasoned consideration of the available information (Terry, Gallois, & McCamish, 1993). It is a deliberative processing model that allows for consideration of the role of health beliefs, and more general beliefs about the consequences of a certain behavior, as well as acknowledging the role of normative influence on behavioral choice (Terry, Gallois, & McCamish, 1993). More specifically, the immediate determinant of behavior is the person's **intention** to perform it. Thus the prediction of intention becomes the important task (Fishbein, 1993). There has been strong correlational evidence of the relationship between intention and behavior even following meta analysis of 87 studies (Sheppard, Hartwick & Warshaw, 1988). The measurement of intention and behavior must be the same in terms of the action, the target, the context, and time, and the two variables must also be measured at the same level of specificity or the relationship between them is weakened. The longer the interval between the measured intention and the behavior, the weaker the relationship becomes. Intentions are determined by the favourability of the individual's **attitude** toward the behavior, and the extent of normative pressure to perform the behavior perceived by the individual, which is labeled the **subjective norm**. Attitudes and norms are highly correlated with intentions. Attitudes are a function of the individual's **salient beliefs** about the consequences of performing the behavior (**behavioral beliefs**), weighted by the value placed on each of the consequences by the individual (**outcome evaluations**). The subjective norm is a function of the individual's perception of pressure from important others (**salient referents**) to perform the behavior (**normative beliefs**), weighted by the individual's **motivation to comply** with these others. Use of belief-based measures allows researchers to explain as well as predict behavior. People who do intend to carry out the behavior can be compared to those who do not intend to do so on each of the components of belief based measures. Comparisons can also be made between groups such as heterosexuals and homosexuals (Terry, Gallois, & McCamish, 1993).

Despite its general popularity in the health psychology literature, the TRA was not used in HIV/AIDS prevention area until recently, although it is expected to be useful given that it allows for the examination of the roles of attitude and social influence (Ross & McLaws, 1993). In developing his theory, Fishbein realized that intentions to perform behaviors under volitional control led to highly accurate predictions while behaviors not under volitional control led to poor predictions (Fishbein,

1993). While safer sex should be regarded as a behavior that is not completely under volitional control for a variety of reasons, there has been evidence to indicate that the TRA provides a coherent understanding of the variables involved in safe sex behavior and AIDS prevention. Where the model has been applied following Fishbein's recommendations however, results have been complex (Lewis & Kashima, 1993). But this is not unexpected given Fishbein's and Ajzen's original and continuing insistence that the relative influence of attitudes and norms on intention will vary with population and behavior under consideration (Fishbein, 1990; Fishbein & Middlestadt, 1989)

General support for the principle contentions of the TRA have been found among a number of populations concerning a variety of AIDS preventive behaviors. That is, intentions to engage in safer sex behaviors have been found to be highly related to or to predict actual behavior, and attitudes and subjective norms have been demonstrated to predict intentions.

Evidence has accumulated that intention to engage in safer sex behavior is related to actual safer sex behavior. Nucifora, Gallois, and Kashima (1993) reported a high correlation between intention to use condoms among undergraduates and actual behavior. As a result of the persistence of this correlation as long as five weeks after the intention was initially stated, Nucifora and colleagues determined that intentions to use condoms are stable. Kashima, Gallois, and McCamish (1993) also reported that intentions regarding condom use that are consistent with past behavior are stable, and Galligan and Terry (1993) found intentions to use condoms partially predicted behavior. This relationship persists across a variety of populations. Gallois, Terry, Timmins, Kashima, and McCamish (1994) reported that intention predicted safe sex behavior among heterosexual males and females from a community sample, homosexual males, and male and female heterosexual students. In addition to predicting condom use, intentions have been found to predict other safe sex behaviors. Although the relationship was not strong, Terry, Galligan and Conways (1993) found intentions predicted avoidance of casual sex, sexual exclusivity, and questioning partners about sexual and drug use histories.

As is expected by the TRA, attitudes and subjective norms have been demonstrated to predict intentions to engage in safer sex behaviors among a variety of populations. Attitude and subjective norm have predicted intentions regarding 1) condom use among homosexuals (Fishbein, Chan, O'Reilly, Schnell, Wood, Bffker, & Cohn, 1992; McLaws 1992, Ross & McLaws, 1992), 2) avoidance of casual sex and questioning partners about sexual and drug use histories among 15-19 year olds

(Richard & van der Pligt, 1991) and undergraduates (Terry, Galligan, & Conways, 1993); 3) intentions to use condoms and frequency of condom use among Texan ninth graders (Basen-Engquist & Parcel, 1992 in Ross & McLaws, 1993); 4) intentions to use condoms among undergraduates (Chan & Fishbein, 1993; Galligan & Terry, 1993; Gallois, Terry, Timmins, Kashima & McCamish, 1994; Nucifora, Gallois, & Kashima, 1993; Terry, 1993; White, Terry, & Hogg, 1994); and 5) intentions to discuss condom use with new partners among undergraduates (White, Terry, & Hogg, 1994). In addition, Rigby, Dietz and Sturgess (1993) found that among all four Australian ethnic groups of Polish, Vietnamese, Italian, and Anglo-Australian individuals, attitudes and subjective norms were significant predictors of intention to use a condom. They also report having replicated this study with a Latin American population.

However, support for the role of attitudes and subjective norms in predicting intentions to engage in safer sex behaviors has not been uniform. Terry, Galligan, and Conways (1993) reported that attitudes and norms failed to predict intentions to engage in sexually exclusive relationships among undergraduates, but in a study by Rigby, Dietz and Sturgess, (1993) the opposite was found to be true, although only a small amount of variance was accounted for. Gallois, Terry, Timmins, Kashima and McCamish (1994) found that sexual intentions of homosexual men were not influenced by subjective norms or attitudes

There has been some discussion about, and conflicting research findings regarding which variable, attitudes or subjective norms, is most influential in predicting intentions to engage in safe sex behavior. Although Basen-Engquist and Parcel (1992) in Ross and McLaws (1993) reported that attitudes were the most important predictor of intentions to limit partners among Texan ninth graders, Ross and McLaw (1992) found subjective norms accounted for most of the variance in predicting condom use intentions among homosexual men. In their study of safe sex behaviors among Australian ethnic groups, Rigby, Dietz and Sturgess (1993) reported that when groups were examined individually, only subjective norms emerged as significant predictors of intention to use condoms. Differences in the importance of attitudes vs. subjective norms in predicting intentions have at times appeared to be related to gender. In a study of college women, although attitudes and norms were both significant predictors, attitudes accounted for greater variance in the prediction of intention (Chan & Fishbein, 1993). In a study by Gallois, Terry, Timmins, Kashima and McCamish (1994) attitudes but not subjective norms were significant predictors of intentions of sexual exclusivity among women in a

community sample, but the reverse was true for men in the same sample. The TRA is flexible and allows for differences to occur between populations and behaviors, however, it now appears that there is a growing consensus regarding the importance of norms in predicting sexual intentions and behavior (McCamish, Timmins, Terry, and Gallois, 1993; Terry, Gallois, and McCamish, 1993;). Trafimow & Fishbein (1995) conducted a series of experiments with undergraduates into the relationship between subjective norms and behavior in general. They demonstrated that normative manipulations had a greater impact on intentions to engage in normatively controlled behaviors than attitudinally controlled behaviors, when the normative prescription of a behavior-specific referent was manipulated or the behavior specific referent was included in the larger set of salient referents. A normatively controlled behavior was defined as one in which the opinions of others would be important, which naturally occurs if another person is involved in the behavior. This speaks to the growing interest in, and demonstrated importance of normative influence, particularly that of sexual partners in predicting safe sex intentions and behaviors (Fishbein, 1990; Galligan & Terry, 1993; Kashima, et al, 1993; McCamish et al., 1993; Nucifora et al., 1993; White, Terry, & Hogg, 1994).

Unresolved Issues for the Theory of Reasoned Action

Unmediated Influences of Attitudes and Subjective Norms

While it has been demonstrated that the central tenants of the TRA hold for predicting AIDS preventive intentions and behavior, there have been some relationships between components that are unexpected and unexplained by the theory. As outlined above, it is expected in the TRA that behavioral beliefs, weighted by outcome evaluations, form attitudes which influence intentions. Intentions in turn have a direct effect on behavior. Similarly, normative beliefs combined with motivation to comply form subjective norms which also influence intentions, and through intentions, behavior (Terry, Gallois, and McCamish, 1993). Only intentions are believed to have a direct effect on behavior. It is not expected that attitudes and subjective norms directly influence behavior, or that their components directly influence either intention or behavior. In addition to being measured indirectly through the components of normative beliefs and motivation to comply, subjective norms are also measured directly as a global perception of social pressure without reference to specific salient referents. It is not expected that the indirect measures be able to account for more variance in intention than the direct measure because

they are two measures of the same construct. However, a few researchers have discovered exceptions to these rules in the area of AIDS preventive behavior.

Suggestions regarding possible different relationships among the variables of the TRA occurred as early as 1979, although not with respect to sexual behavior. Following a comparison of different models of the relationships between variables in the TRA, Bentler and Speckart (1979) proposed that attitudes can influence behavior directly without being mediated by intention. More recently, with regards to AIDS preventive behavior, similar concerns have been raised about the unmediated influence of attitudes and norms on behavior, as well as the unmediated influence of components of attitudes and norms, on intention and behavior. Terry (1993) found, as expected by the TRA, that both attitude and subjective norm significantly influenced the intention of undergraduates to use a condom on their next sexual encounter. However, she also reported evidence that the subjective norm did have a direct effect on behavior, although the component couldn't account for a significant amount of variance. In a study of the influence of attitudes, subjective norms, and emotional factors on the condom use of undergraduates with regular, new, or casual partners, Galligan and Terry (1993) found that norms, and beliefs concerning the risk reduction effects of condom use were primary predictors of intentions to use condoms, and intentions partially predicted behavior. However, in contrast to expectations of the TRA, attitudes and subjective norms were found to have substantive direct effects on behavior unmediated by intention. Kashima, Gallois, and McCamish (1993) also investigated the ability of the theory of reasoned action to predict condom use among undergraduates. They separated normative beliefs about the partner, and motivation to comply with them, from the global measure of subjective norm and found that this partner norm had an indirect effect on intention mediated by subjective norm as expected by the theory. However this partner norm, typically included with other salient referents in the belief based measure of subjective norm, also had a direct impact on attitude toward condom use, and on intention, which is not expected in the TRA. Even if one believes as Fishbein (1993) suggests, that it is artificial to remove beliefs about the partner from the subjective norm and set them up as a separate variable, the influence of that portion of the subjective norm component should not be expected to have any individual direct influences on intention or behavior. When Boyd and Wandersman (1991) compared the TRA with Triandis' (1977) theory of attitude-behavior relations in predicting undergraduate condoms use, they found intentions were best predicted by behavioral beliefs/evaluations and normative beliefs/motivation to comply components of the TRA.

directly rather than through the intervening variables of general attitudes or general subjective norms as the theory suggests.

It appears that although the TRA is a useful means of conceptualizing and predicting AIDS preventive behavior, the relationships between behavioral beliefs and attitude, and between normative beliefs and the subjective norm may be more complex than postulated by the theory.

Normative Beliefs about Salient Referents and the Normative Influence of the Partner

Since the importance of the subjective norm in the prediction of AIDS preventive behaviors has become apparent, a number of researchers have examined the belief based measure of the variable more closely. This is to achieve a greater understanding of the source of normative pressure to engage in safer sex behavior. To date however, research appears to reveal some inconsistency with regards to the importance of various salient referents within and between populations and for different behaviors.

In his report of preliminary research findings, Fishbein (1990) noted that male university students who intended to use condoms identified the same salient referents as those who did not intend to use condoms: their parents; family members; close friends; potential sexual partner; most male students; most female students, religious groups, and doctors. These referents were also used in a study by Fishbein and Chan (1993) of the intentions of female college students to tell their partners to use condoms. Among the male university students, those intending to use a condom were more likely to perceive pressure to always use a condom from their potential sex partner, their closest friends, other male and female students, and their doctors. However Fishbein (1990) cautions that much depends on the given population being examined. Fishbein and Chan (1993) reported that female college students who intended to tell their partners to use condoms perceived significantly more pressure from all of the salient referents to do so, with the exception of religious groups, than those not intending to tell their partner to use condoms. The groups of women did not differ, however, on the levels of their motivation to comply with the salient referents. Unlike for the men in Fishbein's earlier study (1990), parents and other family members did emerge as important salient referents for the women. Terry, Galligan, and Conways (1993) reported that the influence of peers appeared to be particularly relevant regarding intentions to avoid casual sex among undergraduates.

In their investigation of the condom use of American undergraduates, Boyd and Wandersman (1991) discovered that intentions were best predicted by the behavioral beliefs/evaluations and normative beliefs/motivation to comply components of the model directly, unmediated by the variables of general attitudes or general subjective norms. By removing the intervening variables they were able to examine the predictive value of specific outcome and normative belief items on condom use. With regards to normative beliefs the best predictors of condom use included positive normative messages regarding condom use from the individual's sex partner, close friends, parents, and physician and other family members in that order. The influence of religion and professors was not significant but parents and other family members again emerged as important referents although they had not in Fishbein's (1990) preliminary study of college males. Differences between male and female students in this regard were unexamined. Gallois et al. (1992), however, reported that both heterosexual and homosexual research participants appeared to be most responsive to pressures from their partners, and to a lesser degree their friends, regarding safer sex intentions. In general parents and siblings were perceived as exerting little pressure to engage in safer sex behavior. The researchers speculated that this unexpected finding occurred as a result of the research participants evaluating social approval of their sexual behavior in terms of whether or not it conforms to wider social norms for sexual behavior rather than norms of safety. For example, they suggested that homosexuals may feel that they have less approval from parents and siblings regarding their sexuality in general, and that heterosexuals may perceive the use of condoms to contravene religious beliefs about contraception. For heterosexuals the use of condoms might also reflect a degree of planning of sexual behavior that may be perceived as contrary to social norms, particularly of their family.

Gallois et al. (1992) also reported some gender differences with regard to normative influences. The heterosexual men in their study not only indicated that they perceived less approval from their sexual partners but that they were more motivated to comply with their partner's expectations and the expectations of the general public than were women. The researchers suggest that heterosexual men lack confidence in their sexual relations and so may be less likely to raise the issue of safe sex. No information was given about the significance of these findings and no other differences between genders with regards to the belief based measures of subjective norm were reported.

Some researchers have added a behavioral norm to the model, pertaining to beliefs about the behavior of peers (McLaws 1992), and peers and partners (Nucifora, Gallois, and Kashima 1993).

While these norms have been shown to be directly influential in shaping the intentions of undergraduates to use condoms (Nucifora, Gallois, and Kashima 1993) and in accounting for additional variance in the condom use of homosexual men (McLaws, 1992) Fishbein (1993) has cautioned that this variable is merely another component of the variable of subjective norm (perceived social pressure) already contained in the theory of reasoned action. In a similar vein, White, Terry, & Hogg (1994) added a group norm variable to the model, made up of a behavioral norm and group attitude items that loaded on a single factor. In addition to attitude and subjective norm, group norm was predictive of intention to use a condom and intention to discuss condom use with a new partner. According to the authors this suggests the importance of the perception of the reference group's general attitude toward performing the behavior and the perception that significant others perform the behavior themselves. It seems likely however, that the inclusion of behavioral norms would lead to the same criticisms by Fishbein as outlined above.

Partner was removed as a salient referent from the belief based measure of subjective norm and treated as a separate norm by Kashima, Gallois, & McCamish (1993) in predicting condom use among undergraduates. They found that the partner norm had an indirect effect on intention mediated by subjective norm as expected by the TRA but that it also had a direct impact on attitude and on intention, which is not expected in the TRA.

Although it is an advantage of the TRA that it includes social influence as a factor in predicting intentions and behavior regarding safer sex behavior, the theory itself makes no suggestion about which salient referents are to be expected to have the greatest influence on which groups of individuals regarding condom use or other safer sex behaviors. While research to date suggests that sexual partner or potential sexual partner, and friends are consistent important sources of normative influence, other referents such as parents, other family members, physicians, most male or female students, and the general public have sometimes been found to be significantly influential and sometimes not. They have been found in different studies to be influential with one gender but not the other. Although it is important information with regards to creating interventions to increase normative pressure to engage in safer sexual behavior, little has been reported regarding the relative importance of salient referents.

Gender

Fishbein and others (Fishbein & Middlstadt, 1989; Lewis & Kashima, 1993) have been clear about the relative contributions of the components of the TRA in predicting behavior changing across populations and behaviors. However, there is some indication that in the area of AIDS preventive behavior gender may also play a role in the relative contributions of attitudes and subjective norms to intention, and of behavioral and normative beliefs to attitudes and subjective norms. While much research has examined the differences between groups based on sexual orientation or intentions to engage in safe vs. unsafe behavior, some researchers have examined differences between the genders with regard to the relative contributions of the components of the theory. Results have been mixed.

In a study of the safer sex behaviors of avoiding casual sex, questioning sexual partners about their sexual and drug use history, and engaging in an exclusive sexual relationship, Terry, Galligan, and Conways (1993) found that among undergraduates, gender in general did not appear to influence the levels and determinants of behavioral intentions or actual behavior. The exception was that males were more likely carry out intentions to ask their partner about previous sexual and drug use histories. White, Terry, and Hogg, (1994) also reported that gender did not produce main or interactive effects on the prediction of intentions or behavior regarding the use of a condom in the next month, or in discussing condom use with a new partner. However, Macey and Boldero (1992, in Lewis and Kashima, 1993) found that both attitudes and subjective norms predicted intentions for females but neither did for male heterosexuals. Gallois, Terry, Timmins, Kashima & McCamish (1994) reported conflicting results about the relationship between gender and components of the TRA in relation to AIDS preventive behavior within the same study. Their sample consisted of homosexual men, heterosexual male and female students, and a community sample of heterosexual men and women. As expected in the TRA intention was found to predict behavior for all groups of research participants, and attitudes and norms were found to influence the intentions of male and female students. However, for women in the community sample attitudes but not subjective norms were significant predictors of intention and the reverse was true for men. Gallois et al. (1994) suggest that as age does not appear to be an explanation of these differences it may be that the influence of attitudes and norms is different for different behaviors. College students were surveyed specifically about condom use, whereas men and women in the community sample were surveyed regarding their preferred safe sex strategy (usually exclusivity). However, these findings also suggest that for certain populations and certain behaviors that males and females are differentially influenced by attitudes and norms.

With regards to subjective norms in particular, Galligan and Terry (1993) reported significant interactions between norms and gender among undergraduates for using and discussing condoms with new/casual partners, although there were no direct effects for regular partners. Males were more likely to use a condom with a casual/new partner if they perceived normative pressure to do so but this was not true for females. In general females were less able to act in accord with attitudes about using condoms and were also less able to conform to subjective norms with new or casual partners although males also appeared to be less able to act on intentions with casual/new partners as compared to regular partners. These researchers also found that in contrast to expectations of the TRA, attitudes and subjective norms were found to have substantive direct effects on behavior unmediated by intention.

Rationale for the present study

High adolescent pregnancy and STD rates in North America are of concern to health professionals, teachers, and parents alike. Such negative consequences of unprotected sex can lead to enduring physical and social/economic difficulties and, in the case of HIV, a premature demise. Even in the second decade after its discovery, there is no vaccine or cure for AIDS and prevention, particularly condom use, remains the best defense against the spread of STD's including HIV. With regards to HIV in particular, the pattern of infection in North America has changed somewhat. Women and adolescents are currently the fastest growing groups with HIV/AIDS and there are increasing rates of heterosexual transmission. Both males and females tend to become sexually active in their mid teens and by the close of adolescence approximately 80% have experienced sexual intercourse. Arguments have been made that adolescence is the time to try and shape developing sexual habits toward the consistent use of condoms to prevent unwanted pregnancy and exposure to disease.

Previous research suggests that a number of variables influence adolescent sexual behavior including the opinions of peers and parents, age, gender, and attitudes. The theory of reasoned action provides a model that organizes a number of these variables into a coherent explanation of the determinants of condom use and other protective sexual behaviors. However, following investigation with the theory of reasoned action it has been argued that social influence, operationalised as subjective norm, is especially important in the prediction of safe sex intentions and behavior, particularly with

regards to condom use. Further, beliefs about the perceived pressure from salient others and the motivation to comply with them, have in some cases been found to be even more important than expected by the theory. That is, they have been found to directly influence intention and in some cases behavior, by-passing variables that were thought to invariably mediate their effects. There has been some indication that the most consistent influential salient referents include partners and peers however additional significant others have at times included parents, other family members, and physicians.

Research about the determinants of condom use, particularly social influence, among older adolescents in B.C. is informative for a number of reasons. By the late teens, the almost exclusive allegiance to peer group that characterizes middle adolescence has stabilized and the influence of other referents re-emerged. As a result of the report by BC students that 96% of them have received AIDS education in school it can be assumed that by late adolescence virtually all teens know about HIV and the need for condom use. In addition, a substantial proportion (50%) report that their parents have spoken to them about the disease as well. Whether these individuals turn out to be among the most influential salient referents for late adolescents remains to be seen. The theory of reasoned action expects salient referents and motivation to comply to possibly vary with population but to date most research with the theory in this domain has involved Australian and American research participants.

The current study will determine if the components of the theory of reasoned action can predict condom use among this population of older adolescents and young adults in British Columbia. Due to the potential for gender to act as a confound only females will be studied. Although the authors of the theory indicate that the relative contribution of the components of the theory in predicting condom use or any behavior, can vary between populations, it is expected that the theory will predict condom use in this population as it has done so for Australian and American undergraduates. Further this study seeks to add to the recent debate regarding the apparent unanticipated ability of belief based measures of attitudes and norms to influence intention and behavior in an unmediated fashion.

Finally, general research into the determinants of adolescent sexual behavior, unrelated to the theory of reasoned action, suggests that parents can be influential with regards to the use of condoms as a prophylactic measure against unwanted pregnancy and STDs, including HIV, among late adolescents. Research from the perspective of the theory of reasoned action has also highlighted the importance of normative influence or important others. However, in the theory of reasoned action the

beliefs about salient referents such as peers, sexual partners and medical professionals, as well as parents, and the motivation to comply with these important others is summed and reported as a total normative influence score as required by the theory. The theory makes no attempt to explain or explore the mechanisms through which an individual or group becomes a salient referent nor how that salient referent may exert their influence. The current study intends to shed some light on both of these issues with regards to parents as a salient referent. Firstly it seeks to explore the possibility that it is the quality of the relationship with the parent that causes them to be construed by the adolescent as an important person whose opinion matters with regards to protective sexual behaviors. This would constitute a more precise means of understanding how the results of Whitbeck, Conger, & Kao, 1993, who found that parents with poor relationships with their daughters potentiated the influence of peers, might occur. Secondly, The theory of reasoned action narrowly defines the normative influence of the salient referent to be, in this case, the adolescent's awareness of their parents' opinion and the teen's motivation to act on that opinion. However the general research in the area of parental influence on adolescent sexual behavior suggests that the influence of parents may be less direct but more extensive than accounted for in the theory of reasoned action. This study seeks to ascertain if the associations between the variables of the theory of reasoned action and those of relationship with parents, degree of communication about sexual topics with parents, sexual consciousness, sexual guilt, and self efficacy for discussing condom use with a partner, influence adolescents' intentions, communication and use of condoms in the manner suggested by the results of various studies in the literature.

Theory of Reasoned Action

The Theory of Reasoned Action has some distinct advantages as a model for the prediction of health related behaviors in general, and condom use in particular. Fishbein, 1993 claims that the theory has proven to be durable because prediction arises from a relatively small set of theoretically interrelated and operationally defined concepts. Over the course of 25 years of investigation it has often explained a considerable and statistically significant amount of variance in a variety of behaviors and intentions (Fishbein, 1993), including condom use (Boyd & Wandersman, 1991; Galligan & Terry, 1993, Kashima, Gallois, & McCamish, 1993). In addition, unlike other models that attempt to predict health related behaviors such as the Health Belief Model, the Theory of Reasoned Action accounts for the impact of both attitudes and social influence on behavior (Lewis & Kashima, 1993; Terry, Gallois and McCamish, 1993). In studies that provide information about specific salient referents, partners, peers, and parents have been consistently recorded as important others in determining safer sex

behaviors (Boyd & Wandersman, 1991; Chan & Fishbein, 1993; Fishbein, 1990; Gallois, Kashima, Terry, McCamish, Timmons, & Chauvin, 1992; Nucifora, Gallois, & Kashima, 1993; Ross & McLaws, 1992). In two recent studies, parents have proven to be of significant influence in their own right (Boyd & Wandersman, 1991; Chan & Fishbein, 1993). In other studies, parents have been among other significant salient referents in influencing safer sex behaviors (Fishbein, 1990; Russ & McLaws, 1992).

Despite the advantage of the Theory of Reasoned Action, the model has its shortcomings. First, it is not clear why particular individuals are or are not identified as salient referents. Further research is necessary to identify the factors that are associated with individuals being salient referents. This issue seems particularly important when we consider the role of parents who are highly motivated to influence the use of prophylactics by their children. Second, questions remain about improving prediction and explanation of condom use behavior through the addition of constructs and variables that are not currently included in the theory, some of which may lead to an expanded understanding of the role of social influence in predicting condom use behavior.

Parents Who Become Salient Referents

Unlike other models of health behavior the Theory of Reasoned Action includes the impact of social influence in predicting condom use, however, it does so in a narrow, linear and possibly limited fashion. While parents have been identified as salient referents in populations of young adults in at least six studies, the Theory of Reasoned Action does not concern itself with the issue of what makes an individual a salient referent. This is not an important issue in the ability of the model to predict behavior, however, it is an important issue in the matter of enhancing pregnancy and STD preventive behaviors through the use of social influence to change behavior in the desired direction. Fishbein and Middlestadt (1989) note that if one wishes to influence a behavior one must intervene through the attitude or subjective norm component of the theory, whichever accounts for more variance in predicting that behavior. Since researchers in the area have repeatedly found condom use to be under normative rather than attitudinal control (Fishbein, 1990; Galligan & Terry, 1993; Kashima, et al, 1993; McCamish et al., 1993; Nucifora et al., 1993; Terry, Gallois, & McCamish, 1993; White, Terry, & Hogg, 1994), clinicians concerned with prevention are interested in harnessing social influence to change behavior. While expecting that individual salient referents may differ from population to population, the theory does not advance any explanation of how individuals or groups become salient referents, with regards to sexual or any other behavior. By summing the behavioral prescriptions of all

of the individual salient referents into a global score, the Theory of Reasoned Action also treats salient referents as functionally equivalent; their relative importance to the individual and population is generally ignored. Again, while these concerns may not appear to matter to the prediction of condom use behavior, they are important to understanding and attempting to modify that behavior.

In literature on the social influence of parents in the contraceptive behavior of older adolescents and young adults, there is some indication as to how parents become salient referents regarding sexual matters for their offspring. In addition, there are studies that suggest that parents may influence their offspring in less direct ways than simply providing a belief based norm specifically regarding the use of prophylactics.

Factors Related to the Influence of Parents on Sexual Behavior

Quality of Relationship

When parents' relationships with their adolescent daughters are characterized by emotional distance rather than warmth, it has been found that sexual behavior is indirectly influenced through the fostering of needs for intimate relationships outside the family, including sexual ones, and the potentiated influence of peers (Whitbeck, Conger, & Kao, 1993). However, when daughters describe their relationships with their parents as being characterized by such qualities as trust, consistency, support, and openness, these attributes have been found to predict the likelihood of recent communication about sexual matters (Fox & Inazu, 1980). In particular, parent's general tendency to be open in communication has been found to predict the likelihood of communication about sex with their adolescents (Fisher, 1990). Quality of relationship with parents has also been found to be related to adolescent sexual behavior. In a more general fashion, King, Coles, and King (1988) reported that adolescents with a high global "good relationship" score with their parents including factors such as trust, openness to debate, feeling understood, and seeking advice, were more likely to have delayed the initiation of sexual intercourse than adolescents with lower scores. Thus, parental attributes and characteristics of their relationships with their adolescents have implications for communication about sex, and sexual behavior.

Communication with Parents

Various aspects of parental communication with their adolescents about sex have been demonstrated to be linked to a number of sexual behaviors including the use of contraception. These

factors have included: range of sexual topics (Lewis, 1973), extent of communication about sex (Fisher, 1987), frequency of communication about sex (Fox and Inazu, 1980), communication and acceptance of parental attitudes about sex (Daugherty & Burger, 1984; Fisher 1986, Fisher 1987; Treboux & Busch-Rosengel, 1990) discussion about safe sex strategies (Moore & Rosenthal, 1991), orientation towards sex or approval of sex (Baker, Thalberg, & Morrison, 1988, Jaccard & Dittus, 1991) and content of messages intended to be persuasive (Jaccard & Dittus, 1991). Sexual behaviors shown to be influenced by parental communication include: contraceptive use (Fisher, 1987; Furstenberg, 1980; Fox & Inazu, 1980; Herold & Samsom 1980; Newcomer & Udry, 1985; Treboux & Busch-Rosengel, 1990), delayed initiation of sexual intercourse (Leland & Barth, 1992; Lewis, 1973), and number of partners (Daugherty & Burger, 1984; Lewis, 1973). There has however been limited or no attempts to explain or test how communication is expected to influence behavior. In a few cases, mechanisms through which communication might influence behavior have been hypothesized post hoc.

Indirect Paths of Parental Influence: Sexual Consciousness, Guilt, and Communication with Partners

The role of parents has also been implicated in the emotional reaction of adolescents to sexual activity. It has been hypothesized that parental communication about sex exerts indirect but important influence through the parents' orientation toward premarital sex and the degree to which their attempts to influence their children's behavior produces feelings of guilt. Strassberg and Mahoney (1988) found feelings of guilt about engaging in sexual intercourse interfered with the use of contraception, and Delameter and McQuorcodale (1978) found that women whose coital activity was inconsistent with behavioral standards they held for themselves were less able to discuss contraception with their sexual partner. Such discussions with the sexual partner predicted use of prophylactics. The behavioral standards these women held for themselves were associated with having had discussions with parents about sexual topics. More recently, Jaccard and Dittus (1991) found that parents were more likely to emphasize to adolescent daughters that if they engaged in sexual intercourse they would lose the respect of others, and both Baker, Thalberg and Morrison (1988) and Treboux and Busch-Rosengel (1990) found parental approval to influence adolescent attitudes and behavior. It has been hypothesized that communication with parents that contains admonishments to remain chaste, and emphasis on religious implications of sexual behavior (Strassberg & Mahoney, 1988) or that otherwise suggests that premarital coital experience is unacceptable (Delameter & McQuorcodale, 1978) is likely

to lead to feelings of guilt on the part of adolescents engaging in sexual intercourse which interferes with their ability to take precautions. Adolescents must be aware and accepting of their sexual desires and activity in order to be able to anticipate it and use prophylactics.

Sexual Consciousness

While intentions regarding condom use may arise from attitudes and subjective norms about condom use in particular, actual behavior might also be influenced by other factors occurring simultaneously such as feelings about engaging in sexual intercourse at all, or being aware of one's own sexuality. It has been suggested that an individual's ability to protect themselves from unwanted pregnancy, and presumably disease, depends on their ability to plan in advance to obtain the necessary prophylactics. In order to make these plans in advance the individual must be aware of their own sexuality and sexual desires so that they are able to more accurately anticipate the likelihood of their own involvement in sexual activity. While one must be aware of one's own sexual feelings to anticipate sexual activity it has also been suggested that such awareness can be impeded by feelings of guilt.

Sexual Guilt

In its original form the Theory of Reasoned Action is a strictly cognitive model but the inclusion of affective variables such as fear of negative implications of discussing condom use with regular partners (Galligan & Terry, 1993), fear of AIDS (Boyd & Wandersman, 1991), and emotional "gut" reactions toward telling a partner to use a condom (Chan & Fishbein, 1993) have recently been shown to improve prediction of intentions and behavior in discussing and using condoms. The role of guilt, however, has not yet been explored in the context of the theory of reasoned action.

Communication With Sexual Partners

Self Efficacy

While some methods of contraception can be used without prior discussion with a sexual partner, the best form of protection against sexually transmitted diseases, condom use, requires the agreement of both parties in the sexual encounter. It has been found that self efficacy regarding communication with partners about sexual topics is predictive of condom use (Shoop & Davidson, 1994) and serious consideration is being given to including Bandura's construct of self-efficacy (1990) in the basic Theory of Reasoned Action model of condom use (Fishbein, 1993, Lewis & Kashima,

1993). This is primarily because the construct is thought to improve prediction when behavior is not completely under volitional control (Lewis & Kashima, 1993) and evidence about the importance of the construct has been mounting.

There have been two studies that link communication with parents about sex in general to self-efficacy in discussing contraception (Fox & Inazu, 1980) and AIDS (Shoop & Davidson, 1994) with the sexual partner. Fox and Inazu (1980) hypothesized that such communication with parents leads to increases in self efficacy in communication with sexual partners through such mechanisms as mental anticipatory rehearsal, acceptance of one's own sexuality, and desensitizing the adolescent to embarrassment in discussing sexual topics. In addition, they suggest that Bandura's constructs of modeling and actual rehearsal may come into play. Parents model or demonstrate how to raise sexual topics for discussion, and provide the adolescent the opportunity to gain experience in raising sexual issues for discussion themselves. The youth is also afforded the opportunity of expressing their own opinions on sexual topics under conditions of varying arousal due to embarrassment. Such practice might not only raise their confidence in their ability to talk with their sexual partner or potential partner but may also give them the actual skills with which to do so. Self efficacy in communication with sexual partners likely influences actual communication with sexual partners. The role of actual discussion with partners is outlined below.

Actual Communication with Sexual Partner.

There has been ample evidence to indicate the importance of communication with the sexual partner in predicting condom use both in studies from within the Theory of Reasoned Action (Boldero, Moore, & Rosenthal, 1992; Kashima, Gallois & McCamish, 1993; Moore, Rosenthal, & Boldero, 1993; Nucifora, Gallois, & Kashima, 1993;) and from others (Delameter & McQuorcodale, 1978; Diclemente, 1991; Shoop & Davidson, 1994). Studies have shown that when the cooperation of the partner in using condoms has been actively sought the behavior is much more likely to occur (Boldero, Moore, & Rosenthal, 1992; Kashima, Gallois, & McCamish, 1993; Nuciform, Gallois, & Kashima, 1993). Such findings highlight the importance of self-efficacy with regards to communicating about condom use with a sexual partner and the factors that potentiate it.

Proposed Study

Both the Theory of Reasoned Action and the literature regarding parental social influence on adolescent use of contraceptives have separately provided important information about the influences on condom use behavior of older adolescents and young adults. However, neither on its own can render a full explication of the role of parental social influence tied with consistent prediction of a significant amount of variance in condom use. The following study seeks to combine the contributions of both bodies of research in a model of prediction, and tests for the presence of hypothesized relationships and direct and indirect paths of parental normative influence of condom use among late adolescents and young adults. The relationships between the variables outlined above that will be explored are depicted in Figure 1.

[insert figure 1 here]

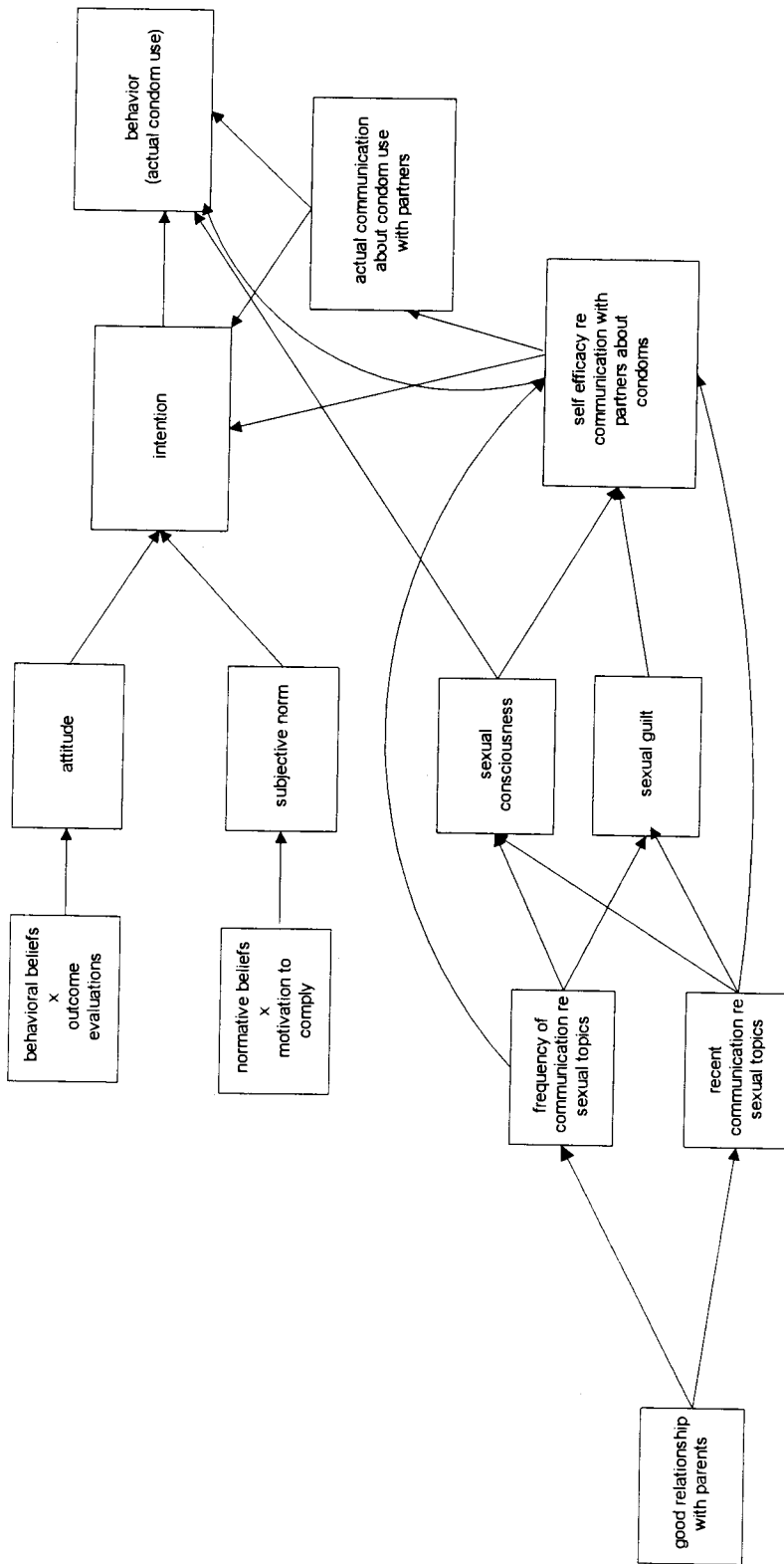


Figure 1.
Hypothesized Combined Model

Hypotheses

Theory of Reasoned Action

- 1) The Theory of Reasoned Action model (figure 2) proposed by Fishbein and Ajzen to explain condom use will fit the data obtained from this population of young female adult Canadians.
- 2) There will be a positive linear relationship between good relationship with parents and the probability of endorsing parents as a salient referent regarding condom use.

Proposed Model

- 3) The addition of the variables discussed above (relationship with parents, communication about sexual topics, sexual consciousness, sexual guilt, self-efficacy regarding communicating about condoms and actual discussions about condoms), in the manner specified, to the Theory of Reasoned Action will form a new model that can be shown to fit the data from this population of young female adult Canadians.

Specific paths to be tested between the new variables are as follows:

Quality of Relationship with Parents

- 4) There will be a direct effect between good relationship with parents and more frequent communication with parents about sexual topics.

Patterns of Communication Resulting From a Good Relationship with Parents

- 5) Frequent communication about sexual topics with parents will have a direct effect on sexual consciousness.
- 6) Frequent communication about sexual topics with parents will have a direct effect on sexual guilt.
- 7) Frequent communication about sexual topics with parents will have a direct effect on self efficacy regarding communicating with partners about using condoms.

Sexual Self Acceptance

- 8) Sexual consciousness will have a direct effect on self-efficacy regarding communicating with a partner about condoms.
- 9) Sexual consciousness will have a direct effect on actual condom use.
- 10) Sexual Guilt will have a direct effect on self efficacy regarding communicating with a partner about condom use.

Ability to Communicate About Condom Use with a Partner

- 11) Self efficacy regarding communicating with a partner about condom use will have a direct effect on actual communication about condom use with a partner.
- 12) Self efficacy regarding communicating with a partner about condom use will have a direct effect on intent to use condoms.
- 13) Self efficacy regarding communicating with a partner about condom use will have a direct effect on actual condom use.

Actual Communication About Condom Use

- 14) Actual communication with partners about condom use will have a direct effect on intent to use condoms.
- 15) Actual communication with partners about condom use will have a direct effect on actual condom use.

Chapter 2

METHOD

Participants

Questionnaires were completed by a total of 348 recently sexually active individuals and individuals who had not had not engaged in sexual intercourse within the previous 6 months. Privacy of research participants and potential participants was protected by avoiding the need for them to identify themselves as sexually active when signing up for or inquiring about the study. Participants were 242 heterosexual undergraduate females who met the criteria of being aged 17-24, and who had been sexually active in the previous six months. The average age was 20 years and 4 months and questionnaire respondents were primarily Caucasian (70.1%) and Asian (22.0%) in ethnic origin. They were recruited on a voluntary basis, although students from introductory psychology classes participated in part for class credit. All participants were given the incentive of being entered in a lottery for \$200.00 which was awarded at the conclusion of data collection.

Materials

All scales are labeled and contained separately in Appendix A for individual examination, followed by their combined forms in the questionnaires to be administered to participants.

Information and Participation Agreement

Participants were provided with written and verbal information about the study, their right to withdraw at any time, and who to contact with any concerns about the study. The written form contained a space in which to indicate their consent in participating, and a lottery ticket for \$200.00. The participation agreement form is attached in Appendix A.

Background Information and Brief Sexual History

Demographic information regarding age, ethnicity, religion, sexual experience, relationship status and sexual orientation were collected. Items about condom use, and communication with partners

about condom use contained in this questionnaire were administered prior to the other measures pertaining to factors believed to be related to condom use. Questions are taken from a variety of sources including Boldero, Moore, and Rosenthal (1992), Diclemente (1991), King, Coles, and King (1989), and Richard and Van der Pligt (1991). The questionnaire is attached in Appendix A

Theory of Reasoned Action Questionnaire (Fishbein & Ajzen, 1980)

Measures of the various theoretical constructs of the Theory of Reasoned Action were created following the steps for the construction of a standard questionnaire outlined by Ajzen and Fishbein (1980). Instructions to respondents are from the sample questionnaire from the same source. The validity of this approach to measuring attitudes and social influence, as they relate to intentions and behavior, can be inferred by the research results of many years. Both in general research and in more recent research pertaining to AIDS preventive behaviors, the relationships between the variables have been consistent, and for the most part, as expected by the theory. That is, it has been demonstrated that behavioral beliefs are related to and predict the general measure of attitude, which in turn is correlated with and predicts behavioral intention. Normative beliefs have been demonstrated to be related to and predictive of the general measure of subjective norm, which in turn is also related to and predictive of behavioral intention. Intention has been demonstrated to predict behavior. This ability of the theory of reasoned action to predict behavior with this approach to measuring the constructs of behavioral beliefs, normative beliefs, attitude, subjective norm, and intention implies the validity of the process. And as prediction cannot occur without reliability, it too is inferred. Whereas there is no one questionnaire pertaining to the theory of reasoned action, there is an apparently valid standard approach to collecting data and measuring the constructs of the theory.

The questionnaire was designed according to the standard approach outlined by Ajzen and Fishbein (1980) and is attached in appendix A. The behavioral and normative belief items were modal responses added following their elicitation from this population as required by Ajzen and Fishbein. The beliefs, attitudes, norms, intentions and behavior under study equal each other in specificity and share a target, context and time. In this study the behavior is “wearing a condom”; the target is “you or your partner”; the context is while “engaging in sexual intercourse” and the time is “the next time”.

Elicitation Questionnaire (Fishbein & Ajzen, 1980)

Salient behavioral beliefs that help to form attitudes, and salient referents that influence subjective norm, can change from population to population. Therefore, for accurate prediction, the beliefs that are salient to this population were elicited for inclusion in the measure. These beliefs were obtained from a standard set of six questions specified by Ajzen and Fishbein (1980). See appendix A attached.

Relationships and Sexual Communication Questionnaire

Research participants were asked to complete a questionnaire comprised of mixed items obtained almost entirely from measures designed for and previously used in research in the area of sexuality. The sources of items are listed below. The questionnaire used in the present study is attached in Appendix A.

The Good Relationship Scale (King, Coles, & King, 1988)

This scale measures a number of dimensions of the parent-youth relationship including understanding, trust, expectations and seeking parents' advice and arrives at a score reflecting the degree to which the relationship is a positive one. It was developed for use with Canadian youth including university and college students and the university/college student version is made up of 6 items. All scales used by the researchers were refined using principle components factor analysis with varimax rotation. Although the scale was based on a small number of items a Cronbach's alpha of .76 indicates that there is an acceptable level of item homogeneity.

The Weighted Topics Scale (Fisher, 1987)

This scale asks respondents to indicate the extent to which nine specific sexual topics have been discussed with their parents. Participants rate the amount on a 5 point scale from 0 (none) to 4 (a lot). Possible scores range from 0 to 36 and the Cronbach's alpha reliability coefficient for this measure have been found to be .90 (Fisher, 1993). When this measure was compared with other measures of sexual communication with parents by Fisher (1993) it was confirmed that the Cronbach's alpha for daughters and their mothers and fathers reports were .90 and .91 respectively. This measure correlated significantly with the Parent-Adolescent Communication Scale (Olsen et al., 1982) which measures openness in general family communication. The scale was not found to be correlated with the revised version of the Marlowe-Crowne Social Desirability Scale (Strahan & Gerbasi, 1972).

The three topics added to this scale were facts regarding HIV/AIDS, issues pertaining to dating in general, and discussing sexual topics with a sexual partner.

Recent Discussion Item (based on item by Fox & Inazu, 1980)

This item asks participants to indicate which sexual topics, from a list provided, they have discussed with either of their parents in the last six months. Subjects range from menstruation, to intercourse and dating. It was used in a study in which variables related to parental characteristics and communication about sex were related to adolescent sexual behavior and perceived ability to communicate with partners about sexual matters (Fox & Inazu, 1980).

Sexual Consciousness Scale (Snell, Fisher, & Walters 1993)

This scale is comprised of 5 items taken from the Multidimensional Sexuality Questionnaire which is made up of 61 items representing 12 scales. Subscales on this test have been demonstrated to have high internal consistency, test-retest reliability, and to be sufficiently independent of social desirability. The test authors also demonstrated concurrent, discriminant and convergent validity of the questionnaire when it was compared with other instruments measuring characteristics of sexuality and sexual behavior. Cronbach's alpha for the sexual consciousness scale is .71. It was not significantly correlated with the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1961). Males and females do not significantly differ in their responses to the scale.

The Condom Use Self-Efficacy Scale (Bradford & Beck, 1991)

This scale was developed for the college population and is comprised of 28 items about an individual's feelings of confidence about being able to purchase condoms, put them on and take them off, and negotiate their use with a partner. The scale contains 12 items specifically pertaining to discussing condom use. It has been demonstrated to have adequate reliability with a Cronbach's alpha of .91 and a test re-test correlation of .81. It was found to have be correlated with an attitudes toward condoms measure, and a self efficacy scale about contraception. Discriminant validity was established and the scale was unrelated to a measure of social desirability

The Revised Mosher Guilt Inventory (Mosher, 1988)

This scale was developed in the 1960's from responses given to sentence completion stems. It has been used with both men and women and has been found useful in the prediction of a broad range

of sexual behaviors. The sexual guilt subscale comprised of 50 items can be removed from the body of the inventory and administered separately (Mosher, 1988). With regard to reliability of the original form, split-half or alpha coefficients have averaged around .90.

Procedure

An initial elicitation study was conducted as recommended by Ajzen and Fishbein (1980). Twenty-seven participants completed the elicitation questionnaire only. Modal salient outcomes and referents were included in the behavioral beliefs and normative beliefs section of the final questionnaire as directed by Fishbein and Ajzen.

Questionnaires were administered individually and in small groups. In all cases care was taken that participants were able to sit far enough apart to have privacy to fill out their questionnaires. Attached to their questionnaires was an outline of the following: the purpose of the study, consent to participate, a guarantee of anonymity in collection, storage, and reporting of data, and a confirmation of voluntary participation that also served as a lottery ticket for the \$200.00 draw. Questionnaire respondents were also informed verbally of these rights. The lottery tickets/voluntary participation forms were collected and stored separately from the surveys. To preserve their anonymity, participants were given envelopes in which to seal their completed survey prior to turning it in. All data and permission forms are stored in a secured location. The questionnaires and the demographic information of the research participants were coded so that the ones completed by the same subject could be kept together for analysis.

*Chapter 3***RESULTS****Characteristics of the Sample**

The average age of participating women was 20 years and 4 months while the modal age was 20 years and 2 months. They were primarily Caucasian (70.1%) and Asian (22.0%) in ethnic origin, the remainder of the sample being comprised of Indo-Canadians and those of mixed race at less than 4% each. Only two individuals were of First Nations descent. Slightly more than half of all participants' mothers (56.4%) and fathers (52.3%) were born in Canada. Twelve percent of participants' mothers and 14.1% of fathers were born in Hong Kong or China while the next largest groups of participants' mothers (5%) and fathers (7.9%) were born in the British Isles. Mothers of remaining participants came from all over the world with no other single country accounting for more than 2.1% of the sample. In the category for countries of origin not listed, 44 mothers came from 19 different countries. Fathers of remaining respondents also came from all over the world with no other country accounting for more than 2.1%. In the category for countries of origin not listed, 35 fathers came from 19 different countries. Sixty-four percent of the young women indicated that their father was a professional (31.9%) or business executive (32.4%), and half indicated that their mothers' held these occupations (36.3% and 13.8% respectively).

In terms of religiosity, approximately equal proportions of the sample identified themselves as Agnostic (23.2%), Catholic (23.2%), and Protestant (25.7%). The largest proportion of the remaining participants (18.7%) placed themselves in the "other" category indicating that they did not have a specific religious orientation or were of a religious orientation not listed such as Buddhist or Sikh. The young women indicated the intensity of their religious beliefs on a scale of one to twenty. About half (51%) indicated that they have

no or low intensity beliefs (0-6), 33.7% indicated that their beliefs are of moderate intensity (7-13), and 15.3% indicated that they hold high intensity religious beliefs (15-20).

Twenty-two percent of the sample, first engaged in sexual intercourse at the age of 17 and the same number experienced their first occasion of sexual intercourse at age 18. However, 42.3% of the young woman had engaged in sexual intercourse by the age of 16. The youngest age at which first intercourse was reported was 13 but all respondents had experienced their first coitus by the age of 22. Apart from one individual reporting 40 partners, the number of reported sexual partners ranged from 1 to 25 with the average number of partners being 3.73. The largest portion of the sample (33.6%) had only had one sexual partner, however, large numbers of respondents had two (19.9%), three (10.8%), or four (9.1%) partners. Eighty-five percent of the sample reported having had six or fewer sexual partners.

The ways in which young women described their current sexual relationship is shown in table 1. Questionnaire respondents were also asked about the number, duration (months) and types of sexual relationships (monogamous and nonmonogamous) they had been in throughout the last 6 months. While most relationships, even those of relatively short duration, were described as being monogamous, nonmonogamous relationships of all lengths were reported as shown in table 2.

Table 1

Percent of Women by Length and Type of Current Sexual Relationship

	<u>Casual</u>	<u>Serious</u>
<u>Length</u>		
short term	3.7	6.6
long term	11.2	60.7

Note. n = 242. 17.8% had no current sexual relationship

Table 2

Percent of Research Participants Reporting Monogamous and Nonmonogamous Relationships of Various Durations in the Previous Six Months.

<u>Duration</u>	<u>Monogamous</u>	<u>Nonmonogamous</u>
12 months or more	53.7	3.3
7 - 11 months	12.8	8
4 - 6 months	13.2	2.5
2 - 3 months	7	1.7
1 month	5.3	1.2
less than one month	4.9	3.3
single sexual encounter		10.7
no relationship		

Note. $n = 242$, total number of nonmonogamous relationships = 40 reported by 26 respondents (not including single sexual encounters)

While 20.7% of research participants reported having engaged in sex between 13 and 23 times in the last six months, approximately once every one or two weeks, most (25.7%) reported engaging in sexual intercourse between 24 and 48 times, or on average between once and twice a week. A further 18.3% reported having had more than 48 occasions of sexual intercourse during that time.

Attitudes

Respondents were asked to rate their attitude toward condom use on a number of evaluative dimensions such as good/bad, enjoyable/unenjoyable, and moral/immoral. In general research participants had favorable attitudes about condom use. The average attitude score along all 7 dimensions for 79% of the young women fell in the positive end of the continuum from slightly positive to extremely positive evaluations. Thirty-one and a half percent of this group held an average attitude that condoms were quite or extremely positive along the evaluative dimensions. Only 14.6% of the young women held slightly negative attitudes about condoms in general.

Social Influence

Few research participants (12.5%) indicated that it was to some degree *unlikely* that important others would want them to use a condom. However, 16.6% stated that important others would be *quite likely* to want them to use a condom, and half of the participants (52.7%) stated that it was *extremely likely* that people who are important to them would want them to use a condom the next time they have intercourse making it very clear that there is a strong perceived social pressure from others to use condoms.

Intent To Use Condoms In Next Six Months

Of the young women who indicated that they did not intend to use a condom, 17.4% indicated that it was *extremely unlikely* that they would intend to do so, and a further 10% thought it to be *quite unlikely*. A small proportion of respondents (12.9%) fell in the midrange indicating that they were *slightly likely* to intend to use condoms or *slightly likely* to not intend to use condoms or were neutral with regards to intentions to use condoms in the next six months. Almost 15 percent (14.9%) of the sample reported that it was *quite likely* that they intended to use a condom in next six months but the largest portion of the of the sample (44.8%) reported that it was *extremely likely* that they would do so. Although the majority of research participants reported that it was at least quite likely that they would use a condom in the next six months, intent to use condoms was not universal likely because some women were using other methods of contraception and did not view themselves to be at risk for unwanted pregnancy, and also did not perceive themselves to be at risk for STDs.

For example, one woman indicated that she was using oral contraception and did not have intercourse with her partner until they had both been tested twice for HIV the recommended 6 months apart and she felt reasonably certain that she could depend on his promise of sexual fidelity. Most women were, however, reporting regular if not perfectly consistent condom use and some women were using condoms in an irregular fashion.

Condom Use Behavior

Approximately half the young women (52.1%) reported that they used condoms in at least half of their sexual encounters in the previous six months. For a complete accounting of reported condom use in the previous six months please refer to table 3.

Table 3

Percent of Young Women Reporting Levels of Condom Use in the Previous Six Months

	<u>Percent of Research Participants</u>
<hr/>	
Condom Use	
every time	22.7
almost always	17.8
more often than not	7.4
half of the time	7.9
somewhat less than half of the time	5.0
rarely	13.2
never	26.0
<hr/>	

Note. n = 242

Relationship With Parents

Scores on the Relationship With Parents Scale were divided into low (6-13), medium (14-22), and high (23-30) groups with higher scores indicating a more positive relationship. Most young women reported their relationship with their parents to be in the medium (43.7%), or high (52.75) range, indicating a positive relationship with their parents. The modal response was 22 with a highest possible score of 30. The mean response was 22.46 $SD=4.62$. Thus it appears that in general most of the young women in the sample view their relationships with their parents in a positive light although there is some variation in the degree of positiveness.

Salient Referents

In an open ended question intended to produce a list of salient referents, questionnaire respondents were asked to identify any groups or individuals that came to mind who would approve of them using a condom in the next six months. Parents and friends were listed by equally large number of participants but surprisingly much smaller numbers of indicated that their boyfriends came to mind. For a complete accounting of salient referents identified by the young women please refer to Table 4.

Table 4

Percent of Research Participants Spontaneously Identifying Individuals and Groups as Salient

	<u>Referents</u>
	<u>Percent Endorsing</u>
<u>Salient Referent</u>	
Parents	81.9
Friends	81.9
Other Family Members	34.5
Medical Professionals	27.4
Classmates/Coworkers/Peers	10.6
Myself	11.5
Boy-friend	14.2
AIDS/STD Prevention Groups	8.9
Boy-friend's Family	8

Note. n = 226

When asked to rank in order of importance to them the individuals in their list who would approve of the participants using condoms, a small portion, 30 of 226 or 13.2%, of the participants incorrectly completed this portion of the questionnaire. No such problems had been apparent in the pilot study. The responses of the remaining 196 questionnaire

respondents were informative however. Please see table 5 regarding the proportion of subjecting ranking each salient referent as first and second in importance.

Table 5: Percent of Research Participants Ranking Each Salient Referent as 1st and 2nd in Importance

<u>Salient Referent</u>	<u>Importance</u>	
	First	Second
Parents	48.5	20.4
Friends	19.4	35.7
Other Relatives	5.1	13.8
Medical Professionals	7.7	7.1
Classmates/Coworkers/Peers	0.5	1.5
Myself	9.2	0
Boy-friend	3.1	6.6
AIDS/STD Prevention Groups	1.0	1.5
Boy-Friend's Family	.5	1

Note. $n = 196$.

Frequency of Communication About Sexual Topics

Research participants were asked to indicate the frequency with which a range of 11 sexual topics were discussed with their parents. Higher scores on the weighted scale indicated that a greater number of topics were discussed with greater frequency. Discussions that occurred more than 4 times about the same topic were considered to be frequent. Approximately one third of the sample fell into each of the low (0-14), medium (15-29), and

high (30-44) ranges of discussing sexual topics at 34.9%, 36.1% and 29% respectively. In terms of extent of discussion of particular topics please refer to table 6.

Recent Communication with Parents About Sexual Topics

On the basis of discussion of sexual topics over the last 6 months, this sample of young adult women can be described in general as having ongoing communication about sex with their parents. Nineteen percent had talked about STD's, and another 19% had discussed communicating about sexual topics with a partner. More than a quarter of parents had recently discussed HIV/AIDS (28.1%) with their daughters and 31.4% talked about homosexuality. Approximately one third of parents also recently discussed intercourse (34.7%), and some topics in particular were likely to be recently talked about with daughters such as contraception (45.4%), pregnancy (47.4%), menstruation (61.2%), and dating (72.7%).

Sexual Consciousness

Scores on the Sexual Consciousness Scale ranged from a low of three to the highest possible score of twenty indicating that the subject is reporting high levels of awareness of their own sexual feelings and desires. The mean score was 15.61, $SD=3.84$. The modal score was 20 with 37 respondents (15.29%) reporting such high levels of awareness. The median score was 16 and 78% of the young women reported a high level of sexual consciousness.

Table 6: Percent of Research Participants Reporting the Occurrence and Frequency of Discussions of Range of Sexual Topics.

Topic	<u>Frequency of Discussion (number of occasions)</u>				
	0	1	2 - 3	4	> 4
Pregnancy	19.2	8.8	28.8	11.7	31.7
Fertilization	56.4	14.9	14.1	5.4	9.1
Intercourse	30.3	17.4	19.1	10.1	23.2
Menstruation	3.8	5.0	15.8	13.3	62.1
STD's	36.5	16.2	21.2	10.8	15.4
Birth Control	28.2	10.8	19.5	10.8	30.7
Abortion	32.8	14.5	21.2	10.0	21.6
Homosexuality	32.0	14.1	19.5	10.0	24.5
Dating	5.0	4.6	16.7	10.4	63.3
Communication w/ Partner re Sexual Matters	54.4	12.9	17.0	3.7	12.0
HIV	31.5	9.5	23.7	10.0	25.3

Note. n = 241

Sexual Guilt

In general these young women are characterized by a low level of sexual guilt. Most research participants (73.4%) scored in the low range (0-100) on the sex guilt subscale of the Revised Mosher Guilt Inventory. Twenty-two percent scored in the moderate range (100-200) and only one subject reported a high level of sexual guilt. $M= 75.95$, $SD =37.33$. Scores ranged from 16- 215, $n=213$. The responses of a small number of respondents were unscorable.

Self Efficacy Regarding Communication With Partners About Condoms

Possible scores ranged from 0 to 48 with higher scores indicating greater self efficacy. Actual scores ranged from 19 to 45 with a mean of 38.7, $SD=4.78$. The largest proportion of research participants (12%) received a score of 44 indicating a high level of perceived self-efficacy in communicating with their partner about condoms. Indeed the vast majority of participants (88.7%) placed themselves in the upper third of the range although there was good variability in scores among these respondents.

Actual Communication With Partners About Condom Use

Possible scores ranged from 0 to 4 representing whether or not communication about using a condom occurred on the subject's last occasion of sexual intercourse and who took responsibility for initiating the communication. A woman who took the responsibility for raising the topic and did so in a direct as opposed to indirect manner received a score of 4. Almost thirty-two percent (31.7%) of the young women indicated that there was no communication about using a condom and an approximately equal number of women (30%) indicated that their partner raised the matter. For 10%, condom use had been discussed previously and an assumption existed that one would be used so no discussion was required on the last occasion of intercourse. When women took on the responsibility of raising the topic most did so in a direct fashion (24.6%) as opposed to an indirect fashion (3.8%). The proportion of direct communicators is similar to the proportion indicating use of condoms on every occasion of intercourse. It is tempting to speculate that those who believe it is necessary to use a condom every time take responsibility and follow through and thus have high self-efficacy in communicating with a partner about condom use which in turn makes it easier to be forthright about the matter on subsequent occasions. This is, however, speculation and was not tested in this sample.

Correlations Among Variables Used In Path Analyses of Theory of Reasoned Action

Table 7 shows the correlations found among variables in the Theory of Reasoned Action Model.

Table 7

Correlation Matrix of Theory of Reasoned Action Variables

	1.	2.	3.	4.	5.	6.
1. Weighted Behavioral Beliefs		.536	.564	.514	.487	.404
2. Weighted Normative Beliefs			.660	.588	.655	.515
3. Attitude				.667	.771	.605
4. Subjective Norm					.673	.481
5. Intention						.709
6. Condom Use						

Note. All correlations were significant $p < .001$

Table 8 displays the correlations between the variables added to the Theory of Reasoned Action. GRP= Good Relationship with Parents, FCST = Frequent Communication regarding Sexual Topics, SG = Sexual Guilt, SC = Sexual Consciousness, SECCP = Self Efficacy regarding Communication about Condom Use with Partner., ACPC = Actual Communication regarding Condom Use with Partner.

Table 8

Correlation Matrix of Variables Added to the Theory of Reasoned Action

	1	2	3	4	5	6
1. GRP		.527**	-.215*	.12	.153	-.081
2. FCST			-.213*	.193*	.215**	.000
3. SG				-.357**	-.224**	-.015
4. SC					.333**	-.041
5. SECCP						.004
6. ACPC						

Note. *p < .01. **p < .001.

Table 9 shows the intercorrelations between all of the variables used in the model combining both the Theory of Reasoned Action Variables and the variables related to parents that were added to the model. As before GRP= Good Relationship with Parents, FCST = Frequent Communication regarding Sexual Topics, SG = Sexual Guilt, SC = Sexual Consciousness, SECCP = Self Efficacy regarding Communication about Condom Use with Partner., and ACPC = Actual Communication regarding Condom Use with Partner. BB = Behavioral Beliefs, NB = Normative Beliefs, A = Attitude, SN = Subjective Norm, I = Intention, and ACU = Actual Condom Use.

Table 9

Intercorrelations Between Theory of Reasoned Action Variables and the Added Variables
Thought to Arise From Parental Influence.

	BB	NB	A	SN	I	ACU
GRP	-.191*	--.005	-.015	-.108	-.076	-.013
FCST	-.168*	-.027	-.014	-.019	.034	.063
SG	.251**	.228**	.238**	.175*	.274**	.140
SC	-.184*	-.140	-.096	-.206	-.185*	-.1136
SECCP	-.032	-.089	-.039	-.062	-.059	-.033
ACPC	.158*	.244**	.301**	.342**	.335**	.309**

Note. * $p < .01$. ** $p < .001$. GRP= Good Relationship With Parents Scale; FCST= frequency of communication about sexual topics; SG= sexual guilt; SC= sexual consciousness; SECCP= self efficacy regarding communicating with a partner about condoms; ACPC= actual communication with partner about condom use, BB= behavioral beliefs; NB= normative beliefs; A= attitudes; SN= subjective norm; I= intention; ACU= actual condom use.

Analyses

Hypothesis 1:

An observed variable path analysis was conducted with the LISREL-8 program (Joreskog and Sorbom, 1993) to test the fit of the theory of reasoned action model to the data collected from this sample of female young adults. (insert figure 2 here.) Believing the

sample size to be sufficient, a chi-square statistic was used to determine fit of the model to the data, however, because this statistic is sensitive to sample size the comparative fit index (Bentler, 1990) was also used. While the CFI is asymptotically equivalent to normed and nonnormed fit indexes NFI, and FI, as a measure of comparative fit, the CFI has a 0-1 range, small sampling variability, and estimates the relative differences in noncentrality of interest. It also has very little bias. The same cannot be said of the other fit indexes (Bentler, 1990). However as indexes do not localize sources of fit in a specified model, standardized residuals and modification indexes were also examined.

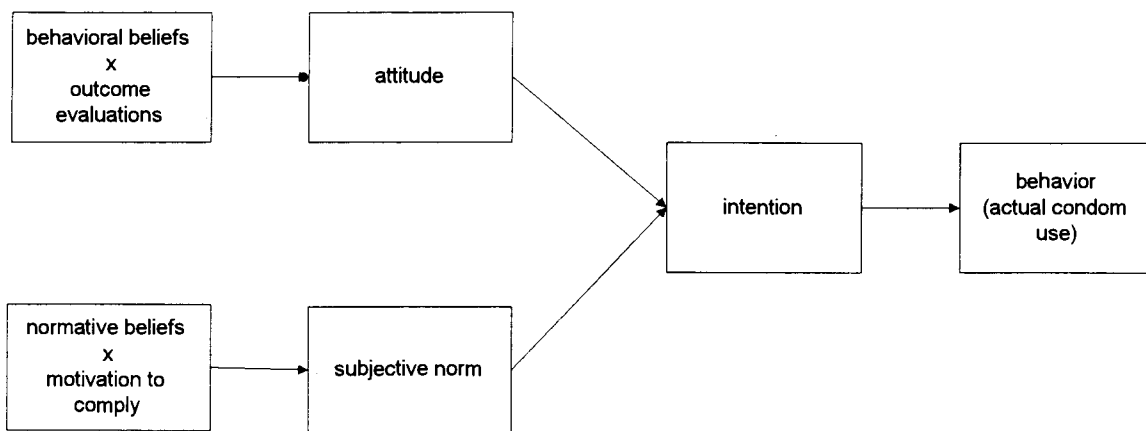


Figure 2.
Theory of Reasoned Action

The Theory of Reasoned Action Model for the prediction of condom use, in its original form, did not fit the data well, $\chi^2 (9, N = 234) = 150.29$ $p = 0.000$ $CFI = .82$ and a largest standardized residual of 8.48. Therefore hypothesis 1 was rejected. However, the modification indices for Gamma suggested that a large improvement in fit would occur if a path from Weighted Normative Beliefs to Attitude was added to the model. Modification indices for Beta indicated that a further large improvement in fit would occur if Attitude was hypothesized to have a recursive relationship with Subjective Norm. Accordingly this adjusted path model was tested with the full understanding that such post-hoc analyses while

often used are not generalizable, however they can provide valuable direction for future model testing. (insert figure 3 here)

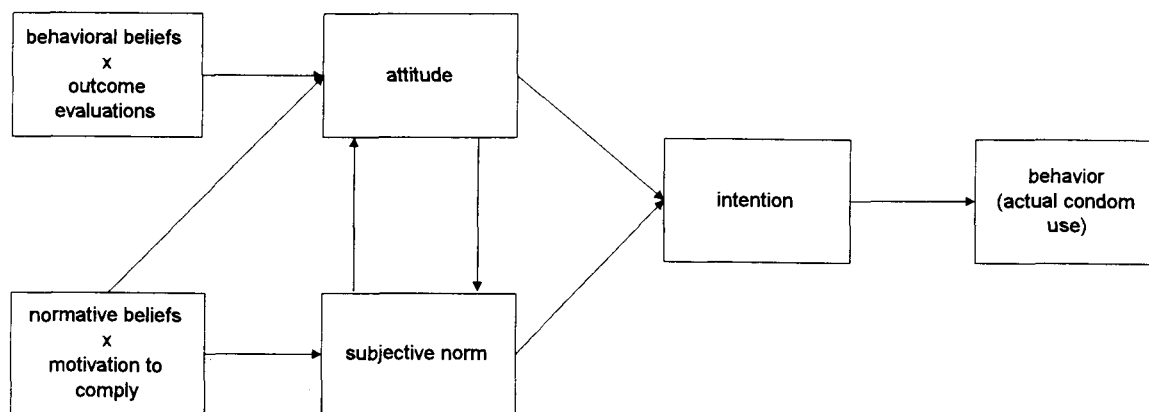


Figure 3.
Adjusted Theory of Reasoned Action
Initial Modification

Adjusted Theory of Reasoned Action Model

The adjusted model had a much better fit to the data, $\chi^2 (6, N = 234) = 19.11$ $p < 0.004$ CFI = .82 and a largest standardized residual of 3.57. Again, however, modification indices for Gamma suggested that fit could still be significantly improved with the addition of one more path to the model; from weighted normative beliefs directly to intention. (insert figure 4 here). This adjustment to the model resulted in $\chi^2 (5, N = 234) = 5.89$ $p = 0.32$ CFI = 1. and standardized residuals between -.21 and 2.03, indicative of a good fit. In a final step, the path between weighted normative beliefs and subjective norm was eliminated because the path coefficient was 0.00 indicating that the first variable did not directly effect the other (insert figure 5 here). The path analysis of this final model produced $\chi^2 (6, N = 234) = 5.98$ $p = 0.43$ CFI = 1.0 with standardized residuals that ranged from -.30 to 2.04. Standardized path coefficients were as depicted in figure 6. The t-values of all eight of the path parameters in the model were greater than an absolute value of 2.

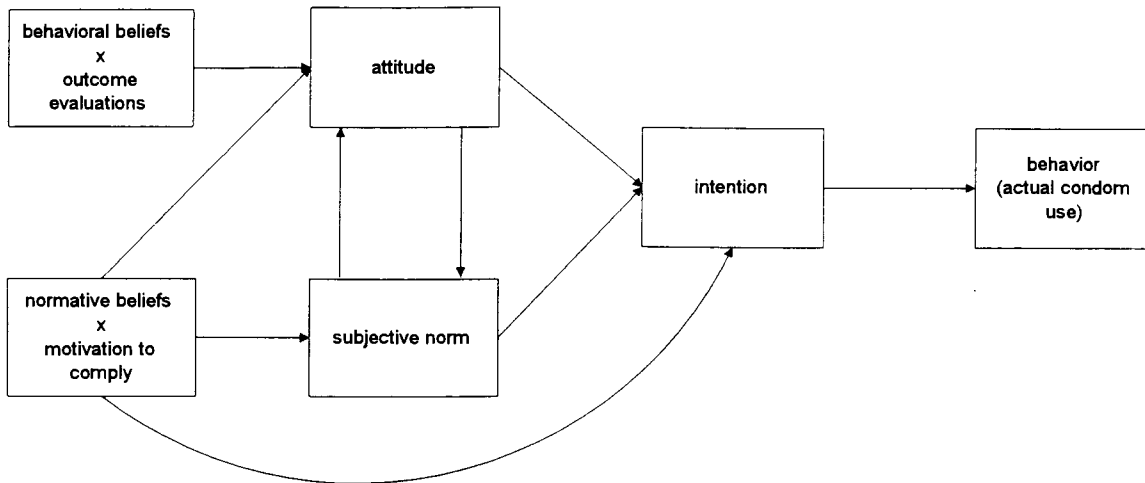


Figure 4.
Adjusted Theory of Reasoned
Action
Modification 2

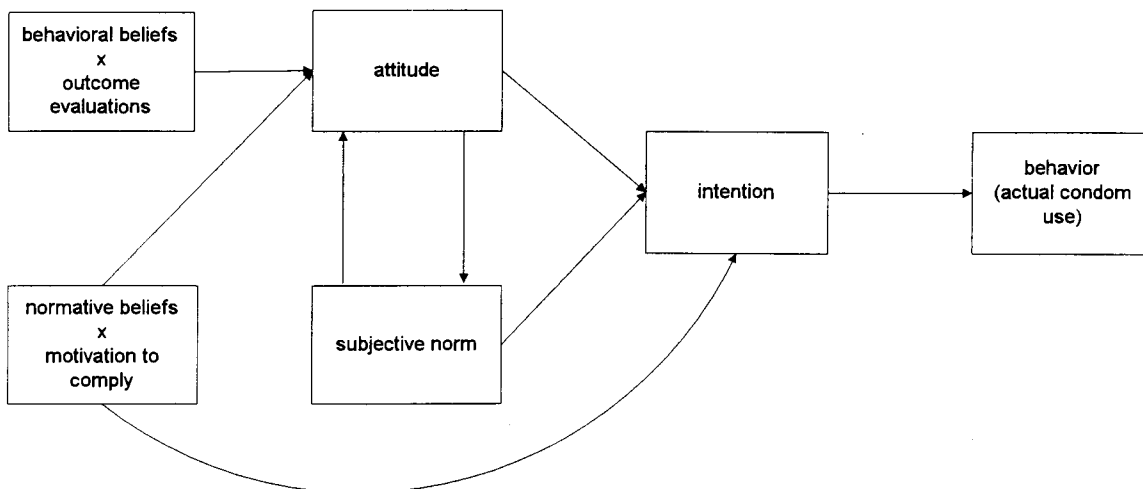


Figure 5.
Adjusted Theory of Reasoned
Action
Final Modification

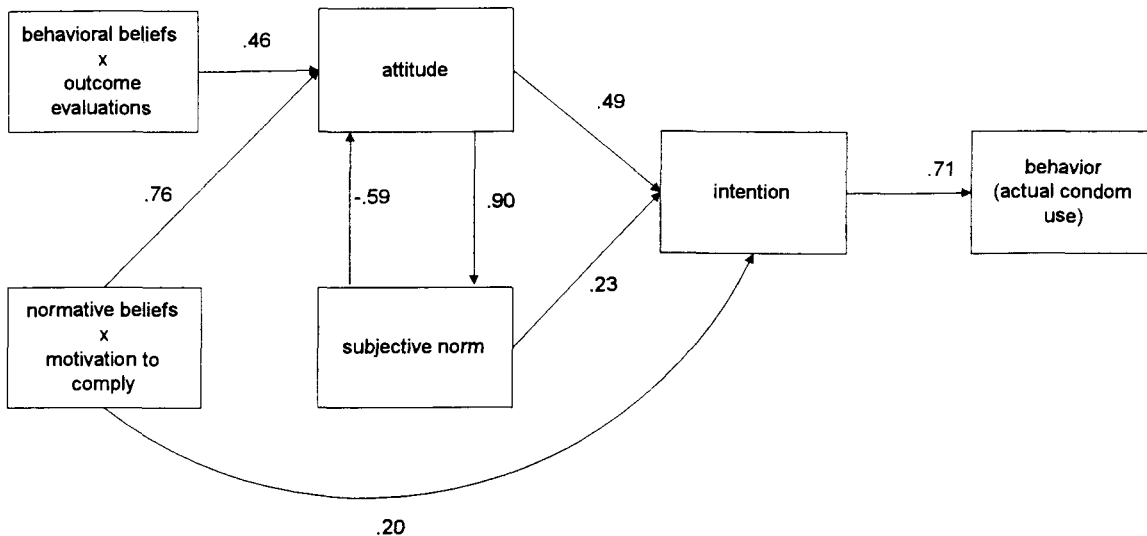


Figure 6.
Adjusted Theory of
Reasoned Action
Standardized Path
Coefficients

Hypothesis 2

The second hypothesis stated that there is a positive linear relationship between good relationship with parents and the probability of endorsing parents as a salient referent regarding condom use. Although it is an advantage of the TRA that it includes social influence as a factor in predicting intentions and behavior, the weighted norms component of the model is an exogenous variable. Therefore no attempt is made to explicate how a salient referent comes to be nominated as having social influence with regards to the particular behavior under question. However, findings in this study indicate that parents are not nominated as a salient referent by virtue of simply being parents but rather by the quality of their relationship with their daughters. A logistic regression $\chi^2(1, N = 234) = 14.029$ $p < .0002$ indicated that there is a significant positive linear relationship between having a good relationship with parents in general and endorsing parents as a salient referent regarding condom use.

Hypothesis 3

An observed variable path analysis was conducted with the LISREL-8 (Joreskog and Sorbom, 1993) program to test the fit of the combined theory of reasoned action and parental social influence model to the data collected from this sample of female young adults (insert figure 7 here). An initial trim of the model, removing the variable recent communication regarding sexual topics and its associated hypothesized paths, was performed after it was determined that this variable was too closely theoretically related to the variable frequency of discussion of sexual topics and that it was highly likely that the two variables were measuring the same construct (insert figure 8 here).

The combined model in its trimmed form did not fit the data well having a χ^2 (43, N = 201) = 106.35 $p=0.000$ CFI = .93. The standardized residuals were out of bounds, the largest being 5.35. The modification indices however, indicated that adding a path from subjective norm to actual communication about condom use would substantially increase the fit of the model (insert figure 9 here). Accordingly this adjusted path model was tested, again with the full understanding that such post-hoc analyses are not generalizable, but do provide valuable direction for future model testing. The fit of the adjusted model was improved with χ^2 (42, N = 201) = 75.23 $p = .0012$ CFI = .96 however the standardized residuals were still out of bounds with a largest value of 4.28. At this stage the modification indices suggested that a path be added from weighted behavioral beliefs to guilt to improve the fit of the model (insert figure 10 here). The resulting adjusted model did have an improved fit to the data with χ^2 (41, N = 201) = 61.54 $p = .021$ CFI = .98. The standardized residuals were still not in bounds however. An additional path from guilt to sexual consciousness appeared to be required to improve the fit of the model and also made theoretical sense (insert figure 11 here). When the model was adjusted, it fit the data. χ^2 (40, N = 201) = 42.07 $df=40$ $p = .38$ and standardized residuals within bounds, the largest being 2.20. The modification indices did not suggest that there was much to be gained from adding anymore paths to the model however two paths with coefficients of 0 (from sexual consciousness to condom use, and from self efficacy regarding communication about condom use to intent to use condoms) were removed from the model for the sake of parsimony (insert figure 12 here) and a final test of the fit of the modified model to the data was conducted. The final model had a χ^2 (42, N = 201) = 42.11 $p = .47$ CFI = 1.0. The standardized residuals were within bounds and the modification indices did not indicate that any further adjustments to the model would improve

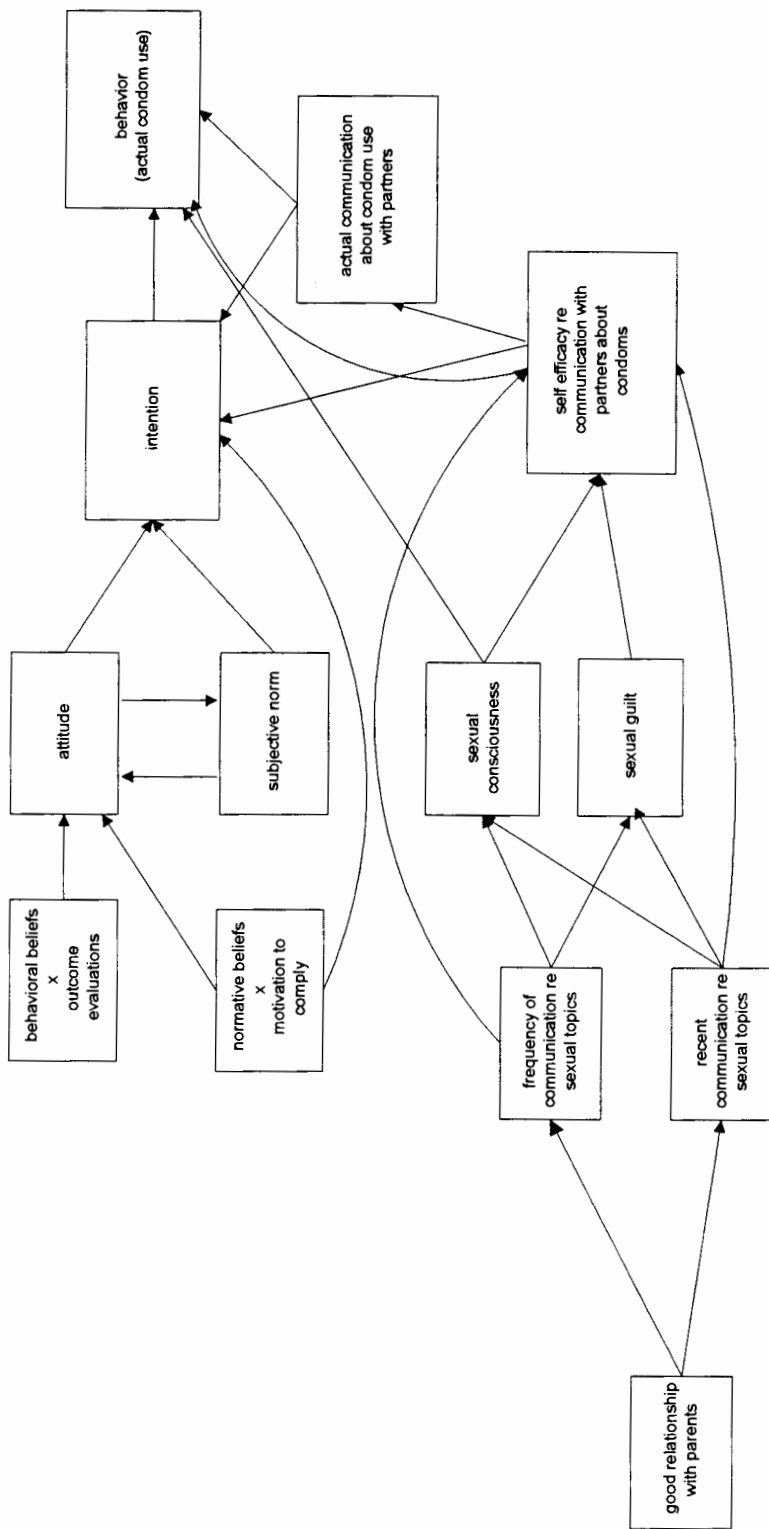


Figure 7.
Hypothesized Combined Model
(Theory of Reasoned Action Revised)

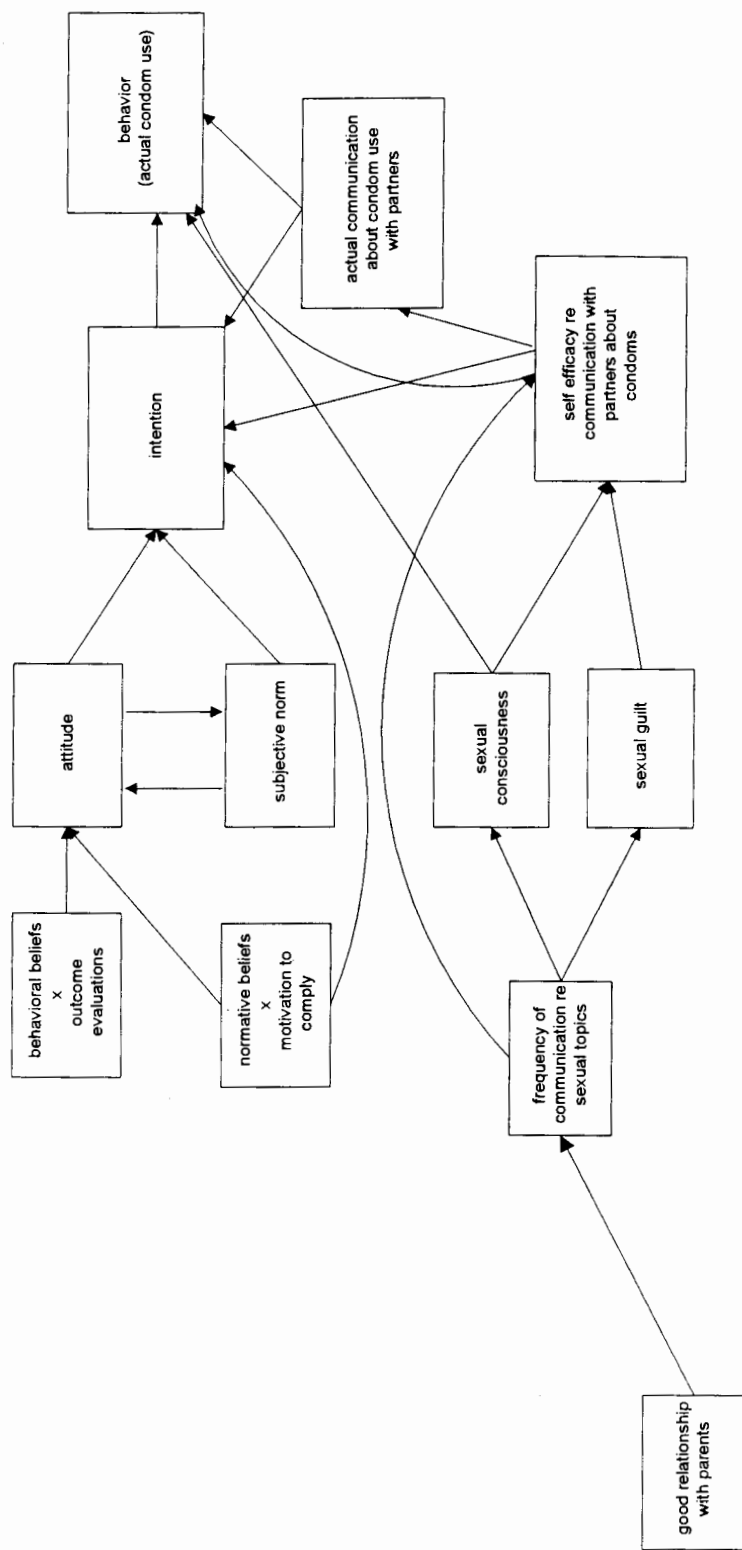


Figure 8.
Hypothesized Combined Model
Initial Modification

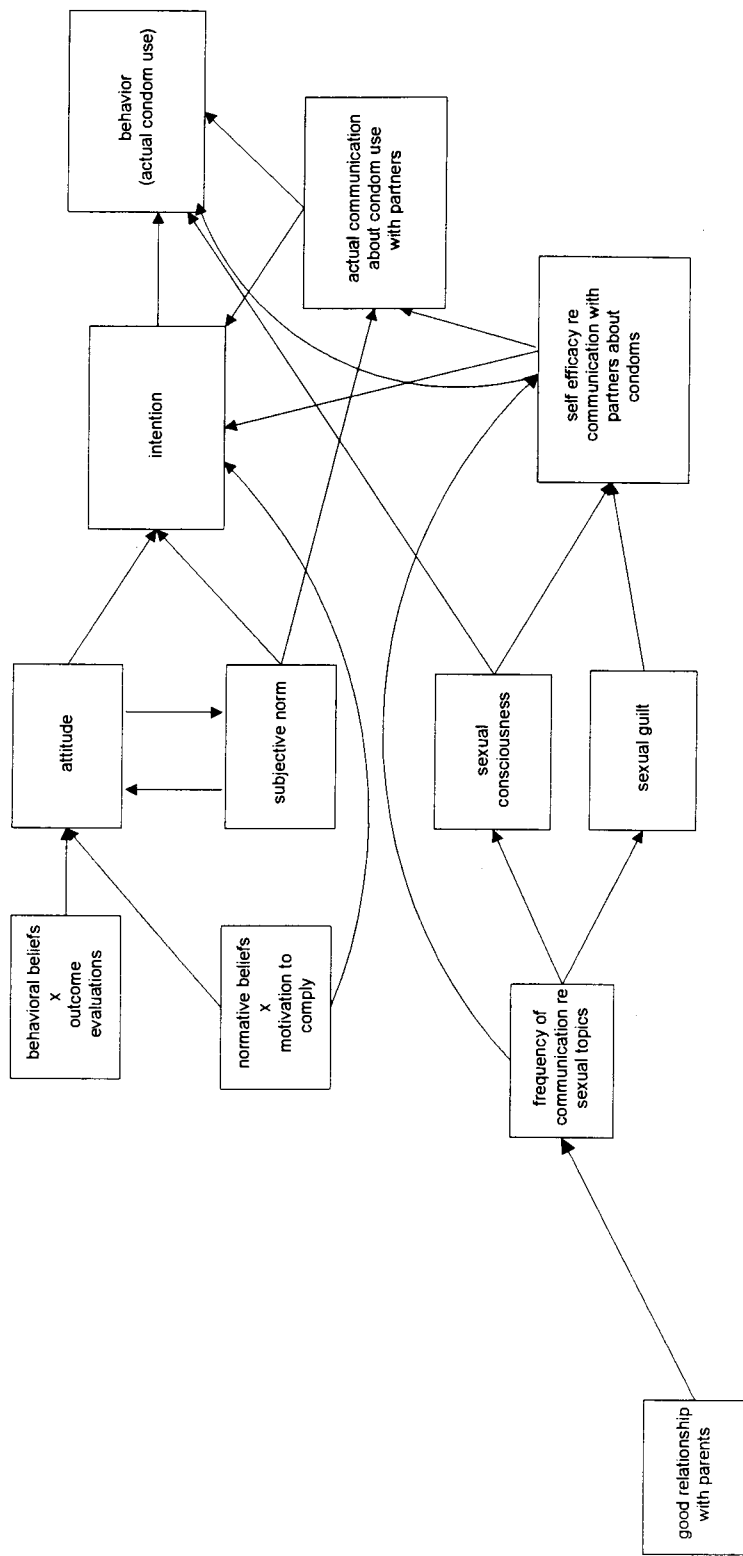


Figure 9
Hypothesized Combined Model
Modification 2

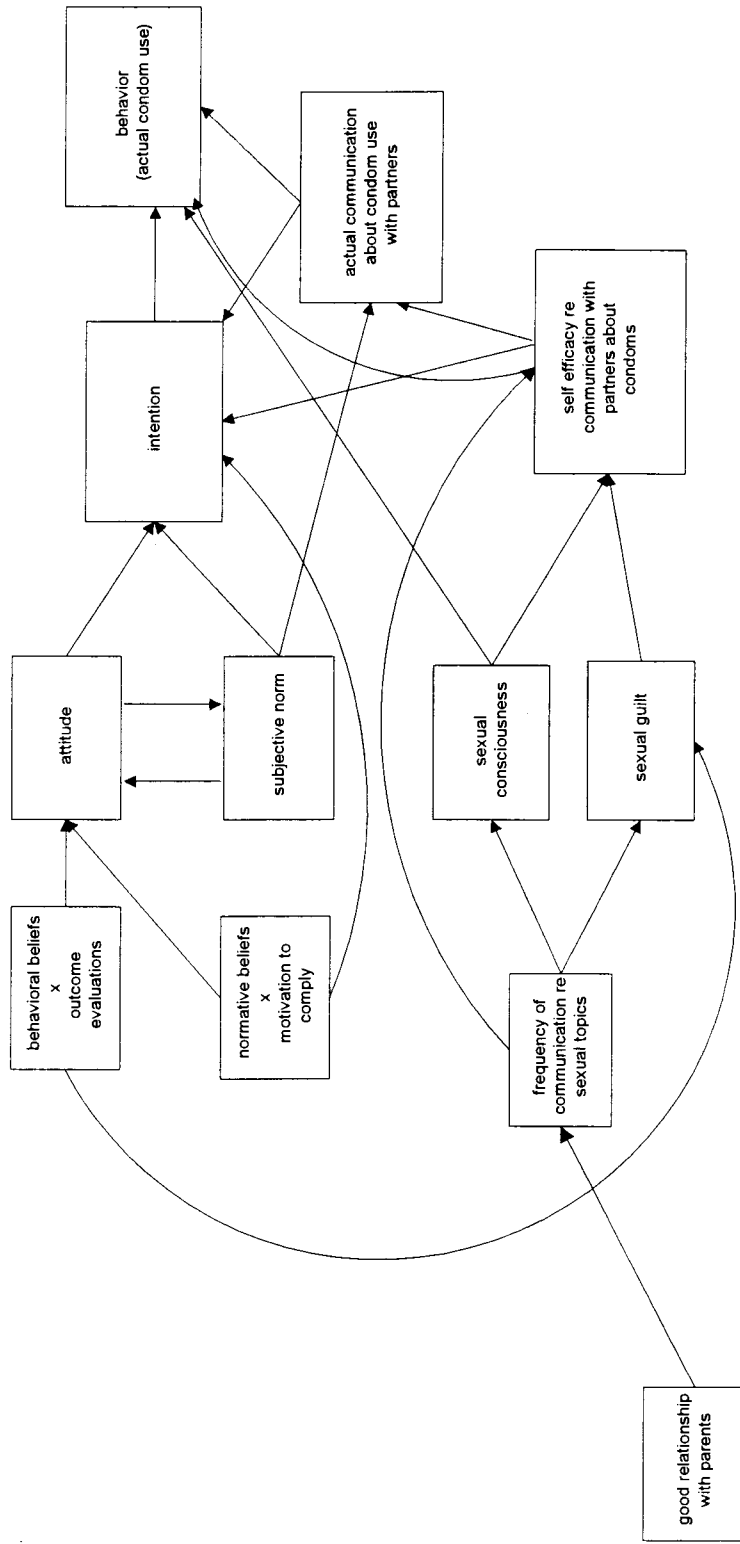


Figure 10.
Hypothesized Combined Model
Modification 3

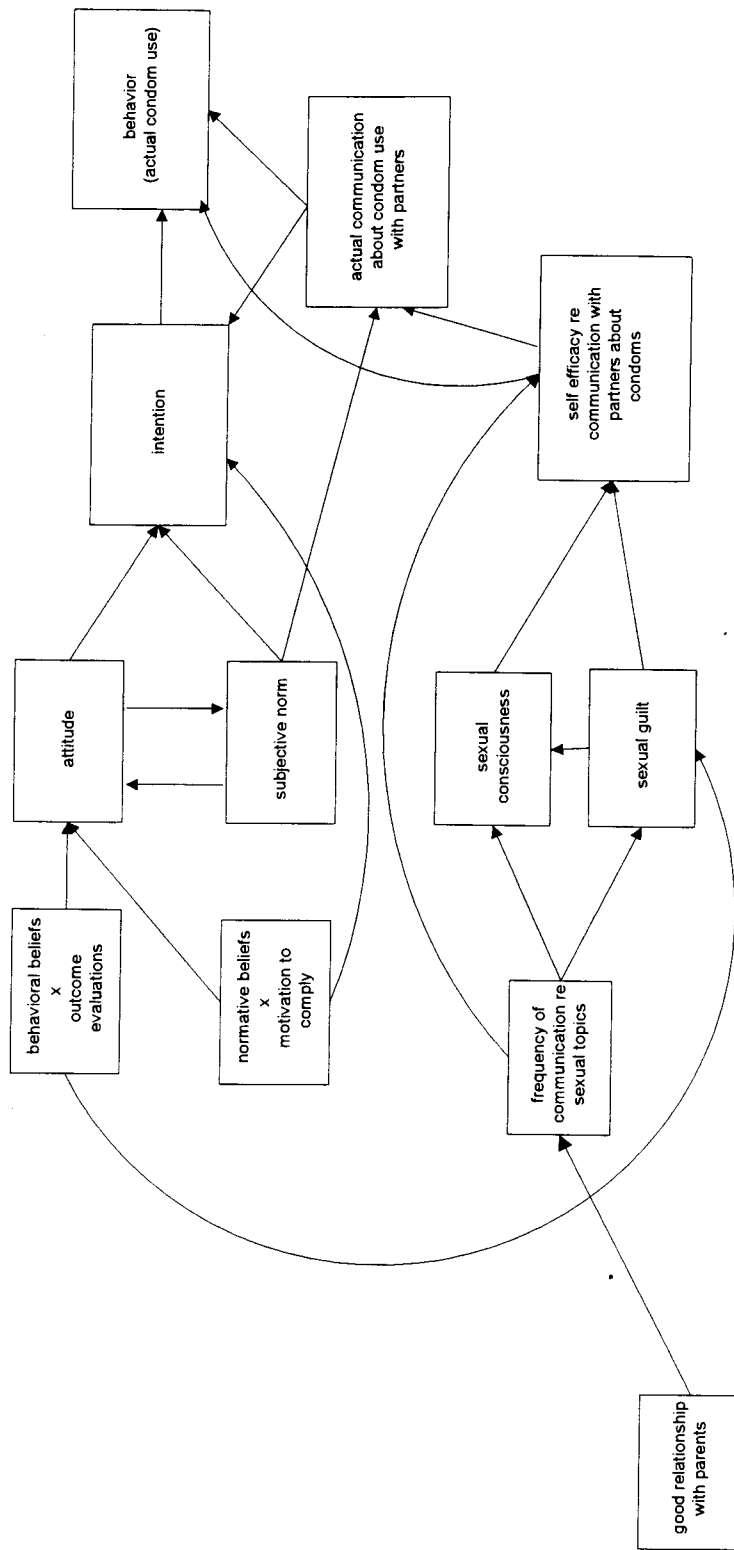


Figure 11
Hypothesized Combined Model
Modification 4

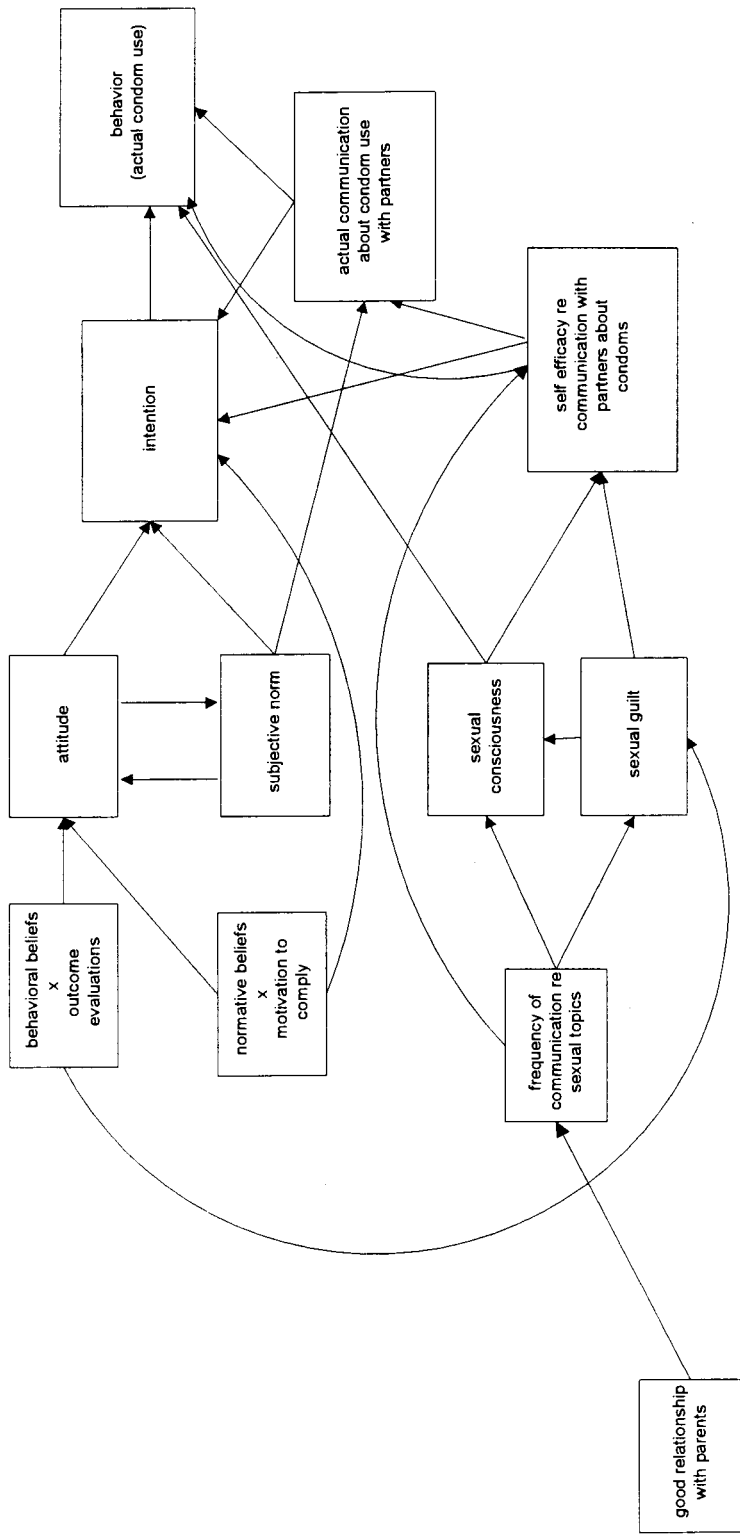


Figure 12.
Hypothesized Combined Model
Final Modification

it's fit to the data. Standardized path coefficients are depicted in figure 13. Fourteen of the 20 paths had a t value of greater than absolute 2. Paths that did not meet this criteria included the paths from frequency of communication to sexual consciousness (1.08), from actual communication about condom use to intent to use condoms (1.77), from self efficacy regarding communication about condom use to condom use (1.29), from actual communication about condom use to use of condoms (1.80), from guilt to self efficacy regarding communication about condom use (1.54), and from communication about condom use self efficacy to actual communication about condom use (-0.74).

Hypotheses 4 through 15 (see figure 13 for illustration)

Hypothesis 4 regarding good relationship with parents having a direct effect on sexual consciousness was supported as were the 5th and 6th hypotheses that frequent communication with parents about sexual topics would have a direct effect on sexual consciousness and sexual guilt. Hypothesis 7 stating that frequent communication with parents about sexual topics would have a direct effect on self efficacy regarding communicating about condom use with a partner was also supported. While sexual consciousness was found to have a direct effect on self efficacy regarding communicating with a partner about condom use as was suggested in hypothesis 8, the contention that sexual consciousness would have a direct effect on actual condom use as stated in the 9th hypothesis was not supported. Sexual guilt however was demonstrated to have a direct effect on self efficacy in discussing condom use with a partner (hypothesis 10). While self efficacy in discussing condom use with a partner did have a direct effect on actual communication regarding condom use (hypothesis 11) it did not have a direct effect on the intent to use condoms as posited in hypothesis 12. Self efficacy in this regard, however, did have a direct effect on actual condom use (hypothesis 13). Finally, the last two hypotheses (14 and 15) regarding the direct effect of actual communication about condom use with partners on intent to use condoms and actual condom use were supported.

Standardized total and indirect effects are located in Tables 10, 11, and 12.

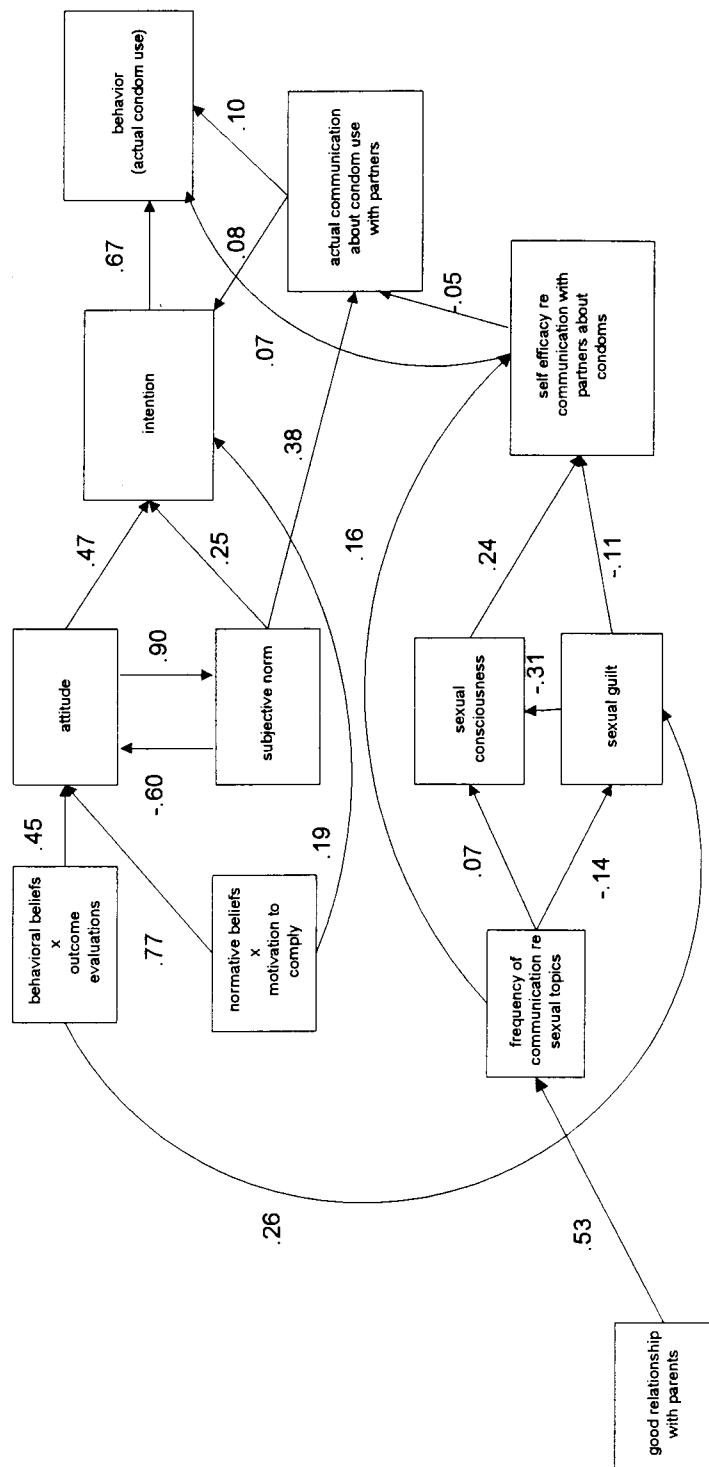


Figure 13.
Hypothesized Combined Model
Standardized Path Coefficients

Table 10: Standardized Total and Indirect Effects of Exogenous Variables on Endogenous Variables.

<u>Endogenous</u>	<u>Exogenous Variables</u>					
	BB Total	BB Indirect	NB Total	NB Indirect	GRS Total	GRS Indirect
Attitude	0.29	-0.16	0.50	-0.27	---	---
Subjective Norm	0.26	0.26	0.45	.045	---	---
Intent	0.21	0.21	0.55	0.36	00.0	0.00
Condom Use	0.15	0.15	0.38	0.38	0.01	0.01
Communication With Parents re Sex	---	---	---	---	0.53	---
Sexual Consciousness	-0.08	-0.08	---	---	0.06	0.06
Sexual Guilt	0.26	---	---	---	-0.07	-0.07
Self Efficacy re Disc. Condom Use w/ Partner	-0.05	-0.05	---	---	0.11	0.11
Actual Communication re Condom Use	0.10	0.10	0.17	0.17	-0.01	-0.01

BB=weighted behavioral beliefs, NB=weighted normative beliefs, GRS=relationship with parents

Table 11: Standardized Total Effects of Endogenous Variables

	A	SN	I	CU	DS	SC	SG	SE	AC
A	- .35	-.39	---	---	---	---	---	---	---
SN	0.59	-.35	---	---	---	---	---	---	---
I	0.47	0.00	---	---	0.00	0.00	0.00	0.00	0.08
CU	0.33	0.02	0.67	---	0.01	0.01	-.01	0.06	0.15
DS	---	---	---	---	---	---	---	---	---
SC	---	---	---	---	0.11	---	-.31	---	---
SG	---	---	---	---	-.14	---	---	---	---
SE	---	---	---	---	0.20	0.24	-.18	---	---
AC	0.22	0.25	---	---	-.01	-.01	0.01	-.05	---

A= attitude, SN subjective norm, I intent, CU= condom use, DS= discussion of sexual topics with parents, SC= sexual consciousness, SG= sexual guilt, SE= self efficacy re discussing condom use with a partner, AC= actual communication with partner re condom use.

Table 12: Standardized Indirect Effects of Endogenous Variables

	A	SN	I	CU	DS	SC	SG	SE	AC
A	-0.35	0.21	---	---	---	---	---	---	---
SN	-0.32	-0.35	---	---	---	---	---	---	---
I	0.00	-0.25	---	---	0.00	0.00	0.00	0.00	---
CU	0.33	0.02	---	---	0.01	0.01	-0.01	-0.01	0.05
DS	---	---	---	---	---	---	---	---	---
SC	---	---	---	---	0.04	---	---	---	---
SG	---	---	---	---	---	---	---	---	---
SE	---	---	---	---	0.04	---	-0.07	---	---
AC	.022	-0.13	---	---	-0.01	-0.01	0.01	---	---

A= attitude, SN subjective norm, I intent, CU= condom use, DS= discussion of sexual topics with parents, SC= sexual consciousness, SG= sexual guilt, SE= self efficacy re discussing condom use with a partner, AC= actual communication with partner re condom use.

Chapter 4

DISCUSSION

Results and Implications Regarding the Prediction of Condom UsePath Analysis Results Pertaining to the Theory of Reasoned Action.

Path analyses of the Theory of Reasoned Action (TRA) model in the current study supports the importance and relatedness of all the variables postulated by Fishbein and Ajzen in the original model but does not support the exact form of their model. Previous research has supported the theory that intention to engage in safer sex behavior is related to actual safer sex behavior including condom use (Galligan and Terry, 1993; Gallois, et al., 1994; Kashima, et al., 1993; Nucifora, et al., 1993; Terry, Galligan and Conways, 1993), and in this study intention was also found to have a direct and strong effect on actual behavior with a standardized path coefficient of .71. In this study path analysis also supported the contention that attitudes and subjective norms influence intention; this is consistent with previous research regarding safer sex behaviors among a variety of populations including undergraduate females (Basen-Engquist & Parcel, 1992 in Ross & McLaws, 1992; Chan, et al., 1992; McCamish, 1994; Nucifora, et al., 1993; Richard & van der Pligt, 1991; Rigby, et al., 1993; Ross & McLaws, 1992; Terry, Galligan, & Conways, 1993; White, et al., 1994).

Results of this study also indicate that attitudes and subjective norms each have a direct effect on intention to use condoms with reasonably strong path coefficients of .49 and .23 respectively suggesting that changes in either attitude or subjective norm can lead to changes in intention. In this respect the original TRA theory was supported. We did not find, as has been suggested elsewhere (Bentler and Speckart, 1979; Terry, 1993; Galligan and Terry, 1993), that the influence of subjective norm and attitude on behavior is unmediated by intention. There has also been some debate regarding which variable, attitudes or subjective norms, is most influential in predicting intentions to engage in safer sex behavior. Although Basen-Engquist and Parcel (1992) in Ross and McLaws (1992) reported that attitudes were the most important predictor of intentions, Ross and McLaw found subjective

norms accounted for most of the variance in predicting condom use intentions. Similarly, in a study by Rigby, Dietz and Sturgess (1993) only subjective norms emerged as significant predictors of intention to use condoms. In some research gender has appeared to be related to the relative importance of attitudes or subjective norms in predicting intentions for safer sex behavior. Studies by Chan and Fishbein, 1993, and Gallois, Terry, et al., 1994 found that for women, attitudes were more influential than subjective norm. This issue of the relative importance of attitudes and subjective norm is of concern with regards to decision making about how to best utilize limited social resources to influence youth and young adults. Should emphasis be placed on attempting to change behavioral beliefs and thus attitudes, or should greater efforts be made to communicate the opinions of important others? While the TRA is flexible and allows for differences to occur between populations and behaviors, there seems to be a growing consensus regarding the importance of normative influence in predicting sexual intentions and behavior (Fishbein, 1990; Galligan & Terry, 1993; Kashima, et al, 1993; McCamish, et al., 1993; Nucifora et al., 1993; Terry, Gallois, and McCamish, 1993; Trafimow & Fishbein, 1995; White, et al., 1994).

The results of the structural equation modeling in this study provide further support for the importance of normative influence and further, give some suggestions about how this component of the theory exerts its influence through relationships among weighted normative beliefs, subjective norm, and attitude. Indeed with the addition of the new paths in our adjusted TRA model, weighted normative beliefs are demonstrated to have a sizable direct effect on attitude. The effect of this new path is even larger than the expected one from weighted behavioral beliefs to attitude. Although unanticipated by the original theory, similar results have been found by Kashima, Gallois, and McCamish (1993) who also investigated the ability of the theory of reasoned action to predict condom use among undergraduates. They separated normative beliefs about the partner, and motivation to comply with them, from the weighted and summed measure of normative beliefs and found that this partner norm had an indirect effect on intention mediated by subjective norm as expected by the theory. However this partner norm, typically included with other salient referents in the belief based measure of subjective norm, also had a direct impact on attitude toward condom use, and on intention, which is not expected in the TRA. Even if one believes, as Fishbein (1993) suggests, that it is artificial to remove beliefs about the partner from the weighted normative beliefs and set them up as a separate variable, the influence of that portion of the normative influence component should not be expected to have any individual direct influences on attitude or intention. No specific referents were singled out of

the belief based measure of subjective norm in the current study, however, the variable as a whole was found to have a stronger direct effect on attitude (.76) than did weighted behavioral beliefs (.46). Although the strength of the effect of weighted normative beliefs on intention was the weakest in the model (.20) it was only slightly smaller than the effect of subjective norm on intention (.23). While results such as these are not hypothesized in the original model they do have much intuitive appeal. They may also shed light on why it is that females at times appear to be more influenced by attitude rather than subjective norm with regards to protective sexual behavior. It appears that the direct relationship between attitude and intention is much stronger than that between subjective norm and intention, however, the simultaneous analysis of all the variables accomplished by structural equation modeling allows us to see that attitude derives much of its strength from normative beliefs. Presumably if an older adolescent is aware of the opinions of their parents or friends regarding condom use they are also quite likely to be aware of the attitudes that underpin the opinions. Why should these attitudes about condom use held by salient referents not be expected to exert an influence on the attitudes of the adolescent or young adult? Perhaps it may be that the occurrence of a certain salient referent endorsing a particular behavior shapes the adolescent's attitudes rather than the attitudes of salient referents being influential. For example, they may make attributions about condom use being smart, or morally correct because certain salient referents whom they view as intelligent or moral think they ought to use them. It may make conceptual sense to separate the roles of two constructs or variables, however, it cannot be surprising if in real life their relationship is much more complicated.

Somewhat more problematic for the traditional form of the TRA was the findings of this study that suggest that normative beliefs do not have a direct effect on subjective norm but rather an indirect effect mediated by attitude. A feedback loop between norms and attitudes was suggested by the path analysis which may also in part explain why conflicting results about the relative importance of attitudes and norms have been so prevalent; they may influence each other in a way and to a degree that has not been anticipated. Although not postulated in the theory of reasoned action, on a theoretical level it does make sense to expect the three components to influence each other. One would expect individuals with certain attitudes to seek out like minded friends, and individuals who tend to be influenced by their friends to take on their attitudes when they take on group membership. The path coefficient between attitude and subjective norm was quite strong at .90. The path coefficient from subjective norm to attitude was also strong but indicated a somewhat puzzling negative relationship.

Path Analysis Pertaining to the Enhanced Theory of Reasoned Action

It is possible that the addition of new variables to an existing model will change the interrelationships between the original variables. This did not occur in the current study. When the variables pertaining to parental relationship and communication, as well as internal variables such as sexual consciousness, guilt, and self efficacy were added to the model, the relationships between the Theory of Reasoned Action (TRA) variables did not change. The enhanced model in its original form was not supported in the initial path analysis, however, many of the hypothesized direct and indirect effects were supported and it was apparent that there were numerous indirect paths through which relationships and communication about sexual topics with parents could effect eventual condom use by young women. Some unanticipated although logical interrelationships between the TRA and the new variables did emerge. More specifically, a direct path between subjective norm and actual communication was suggested with a path coefficient of .38 indicating that the more an individual believed that most people important to her wanted her to use a condom the more likely she was to actually discuss using a condom with her partner. It may be that believing one is acting in a normative fashion, that is doing what is generally expected or what one is supposed to do, reduces embarrassment in raising the issue. It may also lead to the perception that the partner expects the issue to be raised. A direct path between weighted behavioral beliefs and sexual guilt was also suggested with a coefficient of .26. Higher scores on the behavioral belief measure indicate a subject's belief that certain outcomes of condom use are both extremely likely, and extremely important to them. According to the TRA this then leads to increased intentions to engage in the behavior. Individuals with more strongly held behavioral rules for themselves may be more likely to feel guilt when they fail to live up to those rules. They may also be more likely to end up in that position if those rules are hard to live up to. For example, a person who believes that personal condom use is extremely likely to prevent pregnancy and this is extremely important to them is more likely to believe that they should use a condom every single time than an individual who was mostly using another form of birth control and for that reason did not view herself to be at as much risk for pregnancy. Her view might be that condom use would only be only slightly likely to prevent pregnancy (in the event that the other method failed) and so she would not feel as guilty if she failed to use a condom. Further, individuals with such strong behavioral beliefs may also have other strong beliefs about the circumstances under which sexual behaviors are acceptable or not and thus score higher on the measure of sexual guilt.

Good relationship with parents was found to have the a strong direct effect on the frequency of communication about sexual topics with a path coefficient of .53. This was the most influential direct effect in the new portion of the model. This is unsurprising given that good relationships were characterized by openness and trust. In such a context both parties are likely to be more comfortable in raising their concerns. It follows then that as the frequency of open discussions of sexual matters increases, guilt or shame about sexual feelings and behaviors would decrease. Although small, the negative path coefficient of .14 suggests that this is indeed the case. It may be that this relationship would be mediated by parental orientation, that is approval or disapproval of premarital sex, however the value associated with the topics discusses was not measured in this study.

The path coefficient from frequency of communication about sexual topics to sexual consciousness was positive but surprisingly small (.07). It had been hypothesized that with increased communication about sexual issues young women would be more conscious of internal sexual cues. An unexpected although logical path from sexual guilt to sexual consciousness emerged, however, having a strong negative path coefficient of .31. Baker, et al. (1988) suggested that in relation to adolescent use of contraception, less guilt equals clearer thinking. It certainly seems logical that individuals who feel guilty about sexual thoughts and behavior would be more defended against awareness of their own sexual feelings and desires.

As noted by Bandura (1990), simple knowledge of the risk of HIV and of preventive measures has been insufficient to lead to behavior change. However, the findings of Walter et al. (1992) suggest that self efficacy factors may have a greater effect on adolescent decisions to engage in safer sex behavior than do risk appraisals. Thus it is important to know what factors affect self efficacy with regards to communicating about and using condoms. In this study, self efficacy about discussing condoms with a partner was directly affected by frequency of communication about sexual topics (.16), sexual consciousness (.24), and sexual guilt (-.11) as expected. These results supported the theory that increased discussions about sexual topics leads to a greater comfort in, and greater confidence about talking to partners about using condoms. It seems logical that young women who have a greater awareness of their own sexual feelings and desires would be better prepared to discuss sexual topics with their partner including the use of prophylactics. It also seems reasonable that as feelings of guilt about sexual behavior increase confidence in communication about sexual topics including the use of

prophylactics decrease. Although the effect size was much smaller than expected (.07), results suggest that self efficacy regarding communication with a partner about condoms has a direct effect on actual condom use. Self efficacy also had a direct although puzzling small negative effect on actual communication with partners about condoms. Surprisingly, as noted earlier, Subjective norm had a greater direct effect on actual communication with partners about condoms than did self efficacy.

The Nomination of Parents as Salient Referents.

Although it is an advantage of the TRA that it includes social influence as a factor in predicting intentions and behavior, the weighted norms component of the model is an exogenous variable. Therefore no attempt is made to explicate how a salient referent comes to be nominated as having social influence with regards to the particular behavior under question. However, findings in this study indicate that parents are not nominated as a salient referent by virtue of their role as parents but rather because of the quality of their relationship with their daughters. In this study good relationships with parents were characterized by trust, openness to debate, and feeling understood. A significant positive linear relationship was found between having a good relationship with parents and endorsing parents as a salient referent regarding condom use. These results provide further support for, and shed more light on, the findings of Whitbeck, et al., (1993) who concluded that nonsupportive parents can potentiate the influence of peers around issues of sexuality. It now appears that peer influence may become more potent in the vacuum left behind by the lack of parental influence in a parent/child dyad characterized by a lack of trust, closeness, and openness.

Jaccard and Dittus (1991) highlight the difficulty in predicting very complex behavior that is likely to be influenced by a variety of factors, and further point out that previous equivocal results regarding the relationship between parental influence and adolescent sexual behavior is likely the result of the use of linear models instead of multivariate ones. As can be seen from these results, shaping adolescent sexual behavior is not merely a direct matter of communicating biological facts coupled with parental values. The importance of the communication is dependent on the context of the relationship in which it occurs. In the past, the relationship between parental communication about sex and adolescent behavior was tested as a direct one when it now appears that the influence of parental communication, on daughters at least, is effected and mediated by a number of factors, including general quality of relationship unrelated to matters of sexuality. Thus parental influence is more indirect

than previously hypothesized and the way in which parents and daughters relate to one another influences the extent to which messages from parents about sex are heard and perceived as valuable. Surprisingly, young women in this study nominated parents as a salient referent with the same likelihood that they nominated their friends but far more frequently than they did their sexual partner. It cannot be said on the basis of this finding who is the most influential but certainly it is encouraging that parents are put forth by the majority of young women in spontaneous generation of salient referents.

Sample Characteristics

With regards to the results pertaining to the Theory of Reasoned Action (in particular) being somewhat different than has been found in most other studies it becomes important to consider the possible impact of sample characteristics on the results of this study. This study was conducted with a sample of older adolescent and young adult women whose modal age was 20 years old. They were primarily of Caucasian and Asian origin and slightly more than half of all parents were born in Canada. The largest group of parents born abroad (14.1%) came from Hong Kong or China. The research participants were from a variety of religious backgrounds including Catholic, Protestant, and Agnostic with no one group comprising more than 25% of the sample. Most of the young women (51%) described themselves as having no or low intensity of religious beliefs and only a few (15.3%) indicated that they held high intensity beliefs. Their average age at first intercourse was 16, and most (61%) described their current relationship as serious. The largest portions of young women had one or two partners, however, 15% had a history of 7 or more partners. Ten percent of the sample indicated that in the past six months they had experienced a single sexual encounter with a person with whom they did not have an ongoing relationship. A similar portion of respondents indicated that they had engaged in one or more nonmonogamous relationships in the previous six months. Four and a half percent indicated that they previously had a STD and another 6% were not sure. Almost one quarter of the sample indicated that they knew or had known someone with HIV or AIDS and surprising numbers reported that they had sought and received an HIV test either directly or as a result of donating blood (35%). A similar portion of partners were reported to have been tested (36.4%). In general respondents' attitudes toward condoms were positive and it was their perception that salient referents were consistently in favor of condom use. In general research participants in this study reported positive relationships with their parents and a high level of sexual consciousness.

The fact that respondents in this study were older adolescents and young adults may help to explain why parents were elicited as salient referents as frequently as were friends. In a study by Fisher (1986), eighteen to twenty year olds were the only group of adolescents to report attitudes similar to those of their parents solely as function of amount of discussion about sex ever and whether certain topics had been discussed. Early adolescents also tended to share their parents sexual attitudes but this was not true for middle adolescents who held attitudes that were highly divergent from, and significantly more permissive than those of their parents. Fisher hypothesized that this movement away from and then back toward parental attitudes may be due to the greater conformity to peers and greater tendency to devalue conventional norms that occurs in middle adolescence. This suggests the possibility that while the model under study that includes relationship and communication with parents may hold for older adolescents, the relationships between the variables and thus the model may not be the same for middle adolescents. However, for older teens and young adults parents still appear to readily come to mind as an important other who's opinions are relevant in matters pertaining to sexual behavior, in this case condom use.

It does not appear that the results of this study were unduly influenced by unexpected, systematic cultural or religious considerations. Canada is a country of diverse cultural backgrounds as this sample reflects. Most research participants are second generation Canadians and can be expected to have attitudes fairly typical of a western industrialized nation. The remaining research participants whose parents were not born in Canada would have been influenced in their attitudes by the circumstances of their Canadian birth and education as well as their parents' values. Parents born abroad come from many different parts of the world such that no one culture could be expected to exert a substantial effect. For example, if a large group of parents came from a country/culture that could be expected to disapprove of young women having premarital sex or the use of condoms as a prophylactic one might expect sexual guilt scores to be elevated and sexual conscious scores to be depressed. This does not appear to be the case with this sample. Further, whatever their religious values the young women in the present sample as a group did not in general describe themselves as having strong beliefs. King, Coles, and King (1988) also found that most college students attended religious services rarely or not at all, and that this measure of religiosity was unrelated to variables such as relationship with parents, self esteem, and mental health.

This group of late adolescents and young adults do not appear to be unusual in their sexual behavior compared to other adolescents in North America. The average age at first intercourse of the young women in this sample at 16 is very similar to other Canadian (Tonkin et al., 1994) and American (Gibbs, 1993; Jaccard and Dittus, 1991) samples. A large proportion of women, 61%, described their current relationship as serious which was not surprising given the finding of King and his colleagues (1988) that college women are more likely to describe their relationships as long term and serious when compared to their male peers. In terms of number of partners the late adolescents and young adults in this sample were also very similar to other adolescents and young adults in the United States (Gibbs, 1993) and in Canada (King et al., 1988; Tonkin et al., 1994). Nonetheless, despite high levels of sexual education about AIDS (Tonkin et al., 1994), respondents' reports of number of partners, nonmonogamous relationships, STD rates, inconsistent condom use, and casual sex with unfamiliar partners, indicate that a subset of older adolescents and young women attending university in B.C. can be considered to be placing themselves at risk for STDs and possibly pregnancy. On a more positive note, some of the young women in this sample do engage in consistent condom use and combined with reported levels of HIV testing among the young women and their partners it appears that at least some young women are personalizing the messages given to them by parents, teachers, and public health officials about AIDS and STDs. It is also a positive indication that attempts to influence and educate adolescents have resulted in generally positive attitudes about condoms and a generally consistently perceived social norm to use condoms. It was the perception of the questionnaire respondents that for the most part salient referents are consistently in favor of condom use and it seems likely that this is an accurate reflection of the social norm. It seems that parents, teachers, doctors and friends are doing a good job of getting their messages across. Of course it is not a simple direct path from these concerned messages to young adult sexual behavior.

In general this sample of young women reported their relationships with their parents to be positive, however, there was some variability in the degree of positive relationship reported. This finding was similar to that of King, Coles, and King (1988). The young women also generally reported themselves to be high in sexual consciousness. This could in part be due to the fact the sample was self selected for interest in responding to a questionnaire about sexual matters and also because they had been sensitized by the items previous to the sexual consciousness questions and this might have heightened perceived awareness. Although guilt was correlated with intensity of religious feelings the sample was in general characterized by a low level of sexual guilt. Again this may be in part due to the

self selected nature of the sample. Presumably those who had high sexual guilt and/or low sexual awareness would not be so interested or ready to participate in a study about sex.

Limitations/Future Research

Given the conflicting findings regarding the effect of gender on the relative contributions of attitudes and subjective norms to intention and then condom use, as well as other variables in the expanded model, it cannot be assumed that this model that was developed for females would hold in its entirety for males. While many components would be expected to be the same, the manner in which they inter-relate may be different. Independent testing and analysis with a male sample would be required to determine the usefulness of this model for male young adults. The role that gender of the adolescent plays has been unclear in previous research pertaining to protective sexual behaviors. In a study of the safer sex behaviors of avoiding casual sex, questioning sexual partners about their sexual and drug use history, and engaging in an exclusive sexual relationship, Terry, Galligan, and Conways (1993) found that among undergraduates, gender in general did not appear to influence the levels and determinants of behavioral intentions or actual behavior. White, et al., (1994) also reported that gender did not produce main or interactive effects on the prediction of intentions or behavior regarding the use of a condom in the next month, or in discussing condom use with a new partner. However, Macey and Boldero (1992, in Lewis and Kashima, 1993) found that both attitudes and subjective norms predicted intentions for females but not for male heterosexuals. In addition, Gallois, Terry, et al., (1994) reported conflicting results about the relationship between gender and components of the TRA in relation to AIDS preventive behavior. Further, other variables such as parental influence on sexual attitudes (Treboux and Busch-Rossnagel, 1990) sex education (Leland and Barth, 1992), perceived social approval of sexual behavior (Darling and Hicks, 1982; Jaccard and Dittus, 1991; Moore, S. and Rosenthal, D., 1991) and encouragement of STD prevention (Moore, and Rosenthal, 1991) have also at times been suggested to be somewhat dependent on gender.

While this study can reasonably point to possible relationships among variables related to parental social influence on adolescent condom use, such suggestions must be considered to be preliminary work. Because the anticipated relationships were not confirmed by path analyses in their original form, the relationships suggested by the statistical analysis to exist in the adjusted model will need to be verified through further data collection and model testing lest they be an artifact of the

current sample. However, theoretical justification for the initial placement of all the variables and the reasonableness of suggested changes provide the support necessary to justify further testing of the modified model(s).

A further limitation of this study may be a reduction in generalizability of the findings as a result of using a self selected sample of university undergraduates. It may be that these young women come from homes in which child-parent communication is somewhat better than average and they are by virtue of their pursuit of higher education, oriented towards socially appropriate goals. Thus this group of young women may be more greatly influenced by normative pressures than would another sample.

Some researchers might also view the postdiction of condom use to be a somewhat limiting characteristic of this study, however, it was utilized for a number of reasons. Past safer sex behavior including condom use is a strong predictor of intention and future behavior (Boyd & Wandersman, 1991; Gallois, et al., 1992; Kashima et al., 1993; Richard & van der Pligt, 1991; Terry, 1993). It has even found at times to be a stronger predictor of future behavior than intent (Gallois et al., 1994). Although some researchers have used a long term follow up design this usually results in difficulties with low return rates making it difficult to maintain the sample size necessary to conduct a path analysis. Finally, tracking and receiving follow up data can create difficulties in maintaining anonymity as well as possible treatment effects or social desirability effects. That is, individuals might be more likely to actually use a condom on follow up than they otherwise might, because they told a researcher that they have done so, or be tempted to make a false report of condom use in follow up to appear consistent with their prior reported intentions.

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Appendix A

Information and Participation Agreement Form

The purpose of this study is to examine a variety of factors thought to be associated with condom use by college students, including beliefs about condoms, the opinions of important others, and communication about sexual matters. This has become an important area of study in recent years following the increasing numbers of young adults contracting sexually transmitted diseases including HIV infection. Participation in this study involves completing a number of short questionnaires. As questions pertaining to sexuality are considered to be quite personal, all responses will be anonymous and an envelope will be provided so that privacy is maintained as questionnaires are turned in. Results will be written up in such a way that no individual participant will be identifiable and the data will be stored in a locked cabinet. It will be viewed only by those directly involved in the research. University regulations require that research participants sign a form indicating that they know that their participation in this study is voluntary and that they may withdraw their participation at any time. Research participation agreement forms will be collected and stored separately from the questionnaires and when all data has been collected, a copy of the bottom portion of form will be entered into a raffle for \$200.00. Participants with concerns regarding this project or their participation should feel free to contact the principal researcher, Alice Bush M.A., supervisor Marlene Moretti Ph.D., or Chairperson Chris Webster Ph.D. all of the psychology department (291-3354). Results of the study will be made available to interested participants by the principal researcher.

I have read the information about the study outlined above and agree to participate.

Name (print) _____ phone # _____

Signature _____ date _____

Background Information & Brief Sexual History

- 1) How old are you? years _____ months _____
- 2) What is your gender? male _____ female _____ Are you married? Yes _____ No _____
- 3) What country was your mother born in? _____
- 4) What country was your father born in? _____

What is your ethnic background?

- _____ Asian
- _____ Black
- _____ Caucasian
- _____ Indo-Canadian
- _____ First Nations
- _____ Other (please specify) _____

5) What is the occupation of your parents?

Father Mother

- _____ Professional (e.g., accountant, doctor, lawyer, teacher, nurse, military officer)
- _____ Business (e.g., owner, executive officer, manager)
- _____ Factory or farm worker, miner, laborer, waitress, cook, truck driver.
- _____ Clerical (e.g., sales clerk, secretary)
- _____ Sales (e.g., real estate, insurance)
- _____ Skilled worker (e.g., carpenter, electrician, plumber, policeman, chef)
- _____ Farmer or fisherman
- _____ Homemaker (e.g., housewife)
- _____ Unemployed
- _____ Other please specify: _____

6) Please indicate the level of intensity of your religious beliefs by writing a number between 0 and 20 where 0=not at all intense and 20=very intense

Level of intensity of religious beliefs: _____

7) What is your religious orientation?

- _____ Agnostic (belief that we cannot know if God exists or not)
- _____ Atheist (belief that God does not exist)
- _____ Catholic
- _____ Muslim
- _____ Jewish
- _____ Protestant
- _____ Other (please specify) _____

8) How would you describe your sexual orientation?

- _____ heterosexual (opposite sex partner[s])
- _____ homosexual (same sex partner[s])
- _____ bisexual (partners of both sexes)

9) Have you engaged in sexual intercourse?

_____ yes _____ no

Please answer the following questions even if you are not sexually active:

10) Are there any groups or people who would **approve** of you or your partner wearing a condom during sexual intercourse in the next six months?

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

11) Are there any groups or people who would **disapprove** of you or your partner wearing a condom during sexual intercourse in the next six months?

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

12) Are there any other groups or people who come to mind when you think about you or your partner wearing a condom during sexual intercourse in the next six months?

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

13) At the end of the spaces provided in questions 10, 11, & 12 above, please rank the people or groups mentioned in order of importance to you regardless of whether or not they approve of condom use. The person ranked # 1 being most important, #2 next most important etc..

If you have not had intercourse please go on to the remaining questionnaires. We are interested in the opinions of individuals regardless of sexual experience.

14) How old were you when you first had sexual intercourse? _____

15) With approximately how many persons have you had sexual intercourse? _____

16) How would you describe your current **sexual** relationship? (this question refers to relationships in which you are having sexual intercourse - if you are involved in a "romantic" relationship *but are not having sexual intercourse* please check the no sexual relationship box)

- long term (serious)
 long term (casual)
 short term (serious)
 short term (casual)
 no sexual relationship at this time

17) Please indicate the number of each of the following types of sexual relationship(s) (in which you had sexual intercourse) you have had in the last six months. For example, in the past six months a person may have had one, four month monogamous sexual relationship and three single sexual encounters that were not part of a relationship

- 12 months or longer --- monogamous (having no other sexual relationships)
 12 months or longer --- non-monogamous (also having sexual relationships with others)
 7 to 11 months --- monogamous (having no other sexual relationships)
 7 to 11 months --- non-monogamous (also having sexual relationships with others)
 4 to 6 months --- monogamous (having no other sexual relationships)
 4 to 6 months --- non-monogamous (also having sexual relationships with others)
 2 to 3 months --- monogamous (having no other sexual relationships)
 2 to 3 months --- non-monogamous (also having sexual relationships with others)
 1 month --- monogamous (having no other sexual relationships)
 1 month --- non-monogamous (also having sexual relationships with others)
 less than 1 month --- monogamous (having no other sexual relationships)
 less than 1 month --- non-monogamous (also having sexual relationships with others)
 single sexual encounter - no ongoing relationship

18) In the past 6 months (24 weeks) I have engaged in sexual intercourse

- not at all
 1-3 times
 4-6 times
 7-12 times
 13 to 24 times
 24 to 48 times
 more than 48 times

19) In the past six months how often have you used a condom when having sexual intercourse?:

- | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| every time | almost
always | more often
than not | about half
the time | somewhat less
than half the time | rarely | never |

Opinions About Condoms

1) What do you see as the advantages of you or your partner wearing a condom during sexual intercourse in the next six months?

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

2) What do you see as the disadvantages of you or your partner wearing a condom during sexual intercourse in the next six months?

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

3) Is there anything else you associate with you or your partner wearing a condom during sexual intercourse in the next six months?

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

4) Are there any groups or people who would approve of you or your partner wearing a condom during sexual intercourse in the next six months?

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

5) Are there any groups or people who would disapprove of you or your partner wearing a condom during sexual intercourse in the next six months?

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

6) Are there any other groups or people who come to mind when you think about you or your partner wearing a condom during sexual intercourse in the next six months?

- a) _____
- b) _____
- c) _____

d)

e)

f)

Attitudes About Condoms Survey

Instructions

In the questionnaire you are about to fill out we ask questions which make use of rating scales with seven places; you are to make a check mark in the place that best describes your opinion. For example, if you were asked to rate "The Weather in Vancouver" on such a scale, the seven places would be interpreted as follows:

The Weather in Vancouver is

good _____ : _____ : _____ : _____ : _____ : _____ : _____ bad
 extremely quite slightly neither slightly quite extremely

If you think the Weather in Vancouver is *extremely good*, then you would place your mark as follows:

The Weather in Vancouver is

good x : _____ : _____ : _____ : _____ : _____ : _____ bad
 extremely quite slightly neither slightly quite extremely

If you think the Weather in Vancouver is *quite bad*, then you would place your mark as follows

The Weather in Vancouver is

good _____ : _____ : _____ : _____ : _____ : x : _____ bad
 extremely quite slightly neither slightly quite extremely

If you think the Weather in Vancouver is *slightly good*, then you would place your mark as follows:

The Weather in Vancouver is

good _____ : _____ : x : _____ : _____ : _____ : _____ bad
 extremely quite slightly neither slightly quite extremely

If you think the Weather in Vancouver is *neither good nor bad*, then you would place your mark as follows:

The Weather in Vancouver is

good _____ : _____ : _____ : x : _____ : _____ : _____ bad
 extremely quite slightly neither slightly quite extremely

You will also be using a rating scale with likely-unlikely as endpoints. This scale is to be interpreted as in the same way. For example, if you were asked to rated "The weather in Vancouver is cold in January" on such a scale, it would appear as follows:

The Weather in Vancouver is Cold in January

likely _____ : _____ : _____ : _____ : _____ : _____ : _____ unlikely
 extremely quite slightly neither slightly quite extremely

If you think that it is *extremely likely* that The Weather in Vancouver is Cold in January, you would make your mark as follows:

The Weather in Vancouver is Cold in January

likely x : _____ : _____ : _____ : _____ : _____ : _____ unlikely
 extremely quite slightly neither slightly quite extremely

In making your ratings please remember the following points

1. Place your marks in the *middle of spaces*, not on the boundaries:
2. Be sure you answer all items,-please do not omit any.
3. Never put more than one check mark on a single scale.

In this particular questionnaire we are mainly concerned with attitudes toward condom usage.

1) I intend to wear a condom or have my partner wear a condom during sexual intercourse in the next six months.

likely _____:_____:_____:_____:_____:_____ unlikely
 extremely quite slightly neither slightly quite extremely

2) Wearing a condom, or having my partner wear a condom, during sexual intercourse in the next six months would be

good _____:_____:_____:_____:_____:_____ bad
 extremely quite slightly neither slightly quite extremely

wise _____:_____:_____:_____:_____:_____ foolish
 extremely quite slightly neither slightly quite extremely

harmful _____:_____:_____:_____:_____:_____ beneficial
 extremely quite slightly neither slightly quite extremely

enjoyable _____:_____:_____:_____:_____:_____ unenjoyable
 extremely quite slightly neither slightly quite extremely

pleasant _____:_____:_____:_____:_____:_____ unpleasant
 extremely quite slightly neither slightly quite extremely

immoral _____:_____:_____:_____:_____:_____ moral
 extremely quite slightly neither slightly quite extremely

correct _____:_____:_____:_____:_____:_____ incorrect
 extremely quite slightly neither slightly quite extremely

3) Most people who are important to me think my partner or I should wear a condom during sexual intercourse in the next six months

likely _____:_____:_____:_____:_____:_____ unlikely
 extremely quite slightly neither slightly quite extremely

(Note: For convenience and time's sake we are asking you only about particular behavior i.e. using a condom. We could just as easily have asked you about not doing the behavior. Our choice between the two was essentially arbitrary.)

4) My partner or I wearing a condom during sexual intercourse in the next six months would reduce the risk of pregnancy.

likely _____:_____:_____:_____:_____:_____ unlikely
 extremely quite slightly neither slightly quite extremely

5) My partner or I wearing a condom during sexual intercourse in the next six months would reduce the risk of contracting HIV.

likely _____:_____:_____:_____:_____:_____ unlikely
 extremely quite slightly neither slightly quite extremely

6) My partner or I wearing a condom during sexual intercourse in the next six months would reduce the risk of contracting other sexually transmitted diseases.

likely _____ unlikely
extremely quite slightly neither slightly quite extremely

7) My partner or I wearing a condom during sexual intercourse in the next six months would lead to a reduction in spontaneity.

likely _____ unlikely
extremely quite slightly neither slightly quite extremely

8) My partner or I wearing a condom during sexual intercourse in the next six months would lead to reduced sensation/pleasure.

likely _____ unlikely
extremely quite slightly neither slightly quite extremely

9) My partner or I wearing a condom during sexual intercourse in the next six months would interfere with "the mood" of our sexual encounter.

likely _____ unlikely
extremely quite slightly neither slightly quite extremely

10) My partner or I wearing a condom during sexual intercourse in the next six months would lead to less worry/more peace of mind for me.

likely _____ unlikely
extremely quite slightly neither slightly quite extremely

11) My partner or I wearing a condom during sexual intercourse in the next six months would awkward/ embarrassing.

likely _____ unlikely
extremely quite slightly neither slightly quite extremely

12) My partner or I wearing a condom during sexual intercourse in the next six months would be physically uncomfortable.

likely _____ unlikely
extremely quite slightly neither slightly quite extremely

13) My partner or I wearing a condom during sexual intercourse in the next six months would be inconvenient.

likely _____ unlikely
extremely quite slightly neither slightly quite extremely

14) Reducing the risk of pregnancy is

important to me _____ not important to me
extremely quite slightly neither slightly quite extremely

15) Reducing the risk of contracting HIV is

important to me _____ not important to me
extremely quite slightly neither slightly quite extremely

16) Reducing the risk of contracting other sexually transmitted diseases is

important to me _____ not important to me
extremely quite slightly neither slightly quite extremely

17) A reduction in sensation/pleasure resulting from condom use is

important to me _____ not important to me
extremely quite slightly neither slightly quite extremely

18) Interfering with "the mood" of a sexual encounter through the use of a condom is

important to me _____ not important to me
extremely / quite slightly neither slightly quite extremely

19) Reducing worry and increasing my peace of mind is

important to me _____ not important to me
extremely quite slightly neither slightly quite extremely

20) Awkwardness/embarrassment resulting from condom use is

important to me _____ not important to me
extremely quite slightly neither slightly quite extremely

21) Physical discomfort resulting from condom use is

important to me _____ not important to me
extremely quite slightly neither slightly quite extremely

22) The inconvenience (hassle) of using a condom is

important to me _____ not important to me
extremely quite slightly neither slightly quite extremely

23) My friends think I, or my partner, should wear a condom during sexual intercourse in the next six months

likely _____ unlikely
extremely quite slightly neither slightly quite extremely

24) My parent(s) think I, or my partner, should wear a condom during sexual intercourse in the next six months

likely _____ unlikely
extremely quite slightly neither slightly quite extremely

25) My siblings think I, or my partner, should wear a condom during sexual intercourse in the next six months

likely _____ unlikely
 extremely quite slightly neither slightly quite extremely

26) I think I, or my partner, should wear a condom during sexual intercourse in the next six months

likely _____ unlikely
 extremely quite slightly neither slightly quite extremely

27) My sexual partner thinks we should use a condom during sexual intercourse in the next six months

likely _____ unlikely
 extremely quite slightly neither slightly quite extremely

28) My doctor thinks I, or my partner, should wear a condom during sexual intercourse in the next six months

likely _____ unlikely
 extremely quite slightly neither slightly quite extremely

29) Groups for the prevention of HIV and other Sexually Transmitted Diseases think I, or my partner, should wear a condom during sexual intercourse in the next six months

likely _____ unlikely
 extremely quite slightly neither slightly quite extremely

30) Generally speaking, how much do you want to do what your friends think you should do?

likely _____ unlikely
 extremely quite slightly neither slightly quite extremely

31) Generally speaking, how much do you want to do what your parent(s) think you should do?

likely _____ unlikely
 extremely quite slightly neither slightly quite extremely

32) Generally speaking, how much do you want to do what your siblings think you should do?

likely _____ unlikely
 extremely quite slightly neither slightly quite extremely

33) Generally speaking, how much do you want to do what you think you should do?

likely _____ unlikely
 extremely quite slightly neither slightly quite extremely

34) Generally speaking, how much do you want to do what your sexual partner thinks you should do?

likely _____ : _____ : _____ : _____ : _____ : _____ unlikely
extremely quite slightly neither slightly quite extremely

35) Generally speaking, how much do you want to do what your doctor thinks you should do?

likely _____ : _____ : _____ : _____ : _____ : _____ unlikely
extremely quite slightly neither slightly quite extremely

36) Generally speaking, how much do you want to do what groups for the prevention of HIV and Sexually Transmitted Diseases think you should do?

likely _____ : _____ : _____ : _____ : _____ : _____ unlikely
extremely quite slightly neither slightly quite extremely

Relationships, Communication, and Condoms Survey

Please read each statement carefully. Place a number from the KEY below in the space beside each statement to show whether you agree or disagree with it.

KEY:

- 1 = Strongly Agree
- 2 = Agree
- 3 = Undecided
- 4 = Disagree
- 5 = Strongly Disagree

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1) _____ My parent(s) understand me.</p> <p>2) _____ My parent(s) trust me.</p> <p>3) _____ What my parent(s) think of me is important.</p> | <p>4) _____ I ask my parent(s) for advice on serious matters.</p> <p>5) _____ I would raise my children differently from the way I was raised.</p> <p>6) _____ My parent(s) expect too much of me.</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

7) Please read the following statement carefully. Place a number from the KEY below in the space beside each topic to show the **extent** to which you have discussed it with your parent(s).

- 0 = none
- 1 = a little
- 2 = some
- 3 = a fair amount
- 4 = a lot

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>_____ pregnancy</p> <p>_____ fertilization,</p> <p>_____ intercourse,</p> <p>_____ menstruation,</p> <p>_____ sexually transmitted diseases</p> <p>_____ birth control</p> | <p>_____ abortion</p> <p>_____ homosexuality</p> <p>_____ dating</p> <p>_____ communicating with a partner about sexual matters</p> <p>_____ HIV/AIDS</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|

7b) Place a number from the KEY below in the space beside each topic to indicate the **number of times** you have ever discussed it with your parent(s).

- Key**
- 0 = never
 - 1 = once
 - 2 = 2 or 3 times
 - 3 = 4 times
 - 4 = frequently (more than 4 times)

- | | |
|--------------------------------------------------------|----------------------------------------------------------------------------|
| <input type="checkbox"/> pregnancy | <input type="checkbox"/> abortion |
| <input type="checkbox"/> fertilization, | <input type="checkbox"/> homosexuality |
| <input type="checkbox"/> intercourse, | <input type="checkbox"/> dating |
| <input type="checkbox"/> menstruation, | <input type="checkbox"/> communicating with a partner about sexual matters |
| <input type="checkbox"/> sexually transmitted diseases | <input type="checkbox"/> HIV/AIDS |
| <input type="checkbox"/> birth control | |

8) Please indicate with a check mark those matters that you have discussed with your parent(s) **in the last six months**

- | | |
|--------------------------------------------------------|----------------------------------------------------------------------------|
| <input type="checkbox"/> pregnancy | <input type="checkbox"/> abortion |
| <input type="checkbox"/> fertilization, | <input type="checkbox"/> homosexuality |
| <input type="checkbox"/> intercourse, | <input type="checkbox"/> dating |
| <input type="checkbox"/> menstruation, | <input type="checkbox"/> communicating with a partner about sexual matters |
| <input type="checkbox"/> sexually transmitted diseases | <input type="checkbox"/> HIV/AIDS |
| <input type="checkbox"/> birth control | |

8a) Please indicate which item(s) best describes *your parent's views* about intercourse among young adults.

- sex before marriage is wrong for moral reasons
- sex before marriage is not a good idea because of the possibility of negative consequences such as disease or pregnancy
- young people who engage in sex before marriage will lose the respect of others
- sex before marriage is OK if it occurs within a committed caring relationship
- there is nothing wrong with sex before marriage

Listed below are several statements that concern the topic of sexual relationships. Please read each item carefully and decide to what extent it is characteristic of you. Some of the items refer to a specific sexual relationship. Whenever possible, answer the questions with your most recent sexual partner in mind. If you have never had a sexual relationship, answer in terms of what you think your responses would most likely be. Then, for each statement place the letter that best indicates how much it applies to you from the following scale.

- A = Not at all characteristic of me
 B = Slightly characteristic of me
 C = Somewhat characteristic of me
 D = Moderately characteristic of me
 E = Very characteristic of me

9) My sexuality is something that I am largely responsible for.

- 10) I am very aware of my sexual feelings.
- 11) The sexual aspects of my life are determined in large part by my own behavior.
- 12) I am very aware of my sexual motivations.
- 13) I am in control of the sexual aspects of my life.
- 14) I tend to think about my sexual feelings.
- 15) The main thing which affects the sexual aspects of my life is what I myself do.
- 16) I'm very alert to changes in my sexual desires.
- 17) My sexuality is something I myself am in charge of.
- 18) I am very aware of my sexual tendencies.

The following questions inquire about your personal experience with sexually transmitted diseases and your use of prophylactics.

19) Do you personally know, or have you known, anyone diagnosed with HIV or AIDS?

- yes
 no

20) Have you ever had an HIV test? Please place an* next to your answer if this screening occurred as a result of donating blood.

- yes
 no

If you have not engaged in sexual intercourse please continue with question 29.

21) Have any of your sexual partners ever had an HIV test that you are aware of?

- yes
 no

22) Have you ever had a sexually transmitted disease (e.g., Gonorrhea, Chlamydia, herpes)?

- yes
 no
 don't know

23) Are you currently using contraception?

- yes
 no

24) If so, is it a form of contraception other than condoms?

- yes
 no

25) Which statement best describes communication with your partner about using condoms the last time you had intercourse.

- There was no communication about using a condom.
 We just knew we wanted to use a condom.

- I suggested indirectly that we use a condom.
 My partner suggested indirectly that we use a condom.
 I suggested directly to my partner that we use a condom.
 My partner suggested directly that we use a condom.

26) Have you ever talked with a sexual partner about using condoms for protection from sexually transmitted diseases before having sexual intercourse? Yes No

27) Has there ever been an occasion on which you thought you and your partner should use a condom but you did not suggest it and one was not used? Yes No

28) If so, what prevented you from raising the issue?

The following questions ask about your own feelings about discussing condom usage in specific situations. Please respond even if you are not sexually active or have never used (or had a partner who used) condoms. In such cases, indicate how you think you would feel in such a situation. Responses are scored as follows:

- 0 = Strongly disagree
 1 = Disagree
 2 = Undecided
 3 = Agree
 4 = Strongly agree

29) I feel confident in my ability to discuss condom usage with any partner I might have.

30) I feel confident in my ability to suggest using condoms with a new partner.

31) I feel confident I could suggest using a condom without my partner feeling "diseased."

32) If I were to suggest using a condom to a partner, I would feel afraid that he or she would reject me.

33) If I were unsure of my partner's feelings about using condoms, I would not suggest using one.

34) I would feel comfortable discussing condom use with a potential sexual partner before we ever had any sexual contact (eg hugging, kissing, caressing, etc.).

35) I feel confident in my ability to persuade a partner to accept using a condom when we have intercourse.

36) I would not feel confident suggesting using condoms with a new partner because I would be afraid he or she would think I've had a past homosexual experience.

37) I would not feel confident suggesting using condoms with a new partner because I would be afraid he or she would think I have a sexually transmitted disease.

- 38) _____ I would not feel confident suggesting using condoms with a new partner because I would be afraid he or she would think I thought they had a sexually transmitted disease.
- 39) _____ I would feel comfortable discussing condom use with a potential sexual partner before we ever engaged in intercourse.
- 40) _____ If my partner didn't want to use a condom during intercourse, I could easily convince him or her that it was necessary to do so.

The following inventory (Mosher, 1988) consists of items arranged in pairs of responses written by college students in response to sentence completion stems. You are to respond to each item as honestly as you can by **rating your response on a 7 point scale from 0, which means NOT AT ALL TRUE (FOR) ME, to 6, which means EXTREMELY TRUE OF (FOR) ME.** Ratings of 1 to 5 represent ratings of agreement-disagreement that are intermediate between the extreme anchors of NOT AT ALL TRUE and EXTREMELY TRUE for you. The items are arranged in pairs of two to permit you to compare the intensity of TRUENESS for you. This limited comparison is often useful since people frequently agree with only one item in a pair. In some instances, it may be the case that both items or neither item is true for you, but you will usually be able to distinguish between items in a pair by using different ratings from the 7- point range for each item. Rate each of the items from 0 to 6 as you keep in mind the value of comparing items within pairs. Record you answer on the blank next to the item. Please do not skip any items.

1) "Dirty" jokes in mixed company ...

_____ do not bother me.

_____ are something that make me very uncomfortable.

2) Masturbation ...

_____ is wrong and will ruin you.

_____ helps one feel eased and relaxed.

3) Sex relations before marriage

_____ should be permitted.

_____ are wrong and immoral.

4) Sex relations before marriage ...

_____ ruin many a happy couple.

_____ are good in my opinion.

5) Unusual sex practices ...

_____ might be interesting.

_____ don't interest me.

6) When I have sexual dreams ...

_____ I sometimes wake up feeling excited.

_____ I try to forget them.

7) "Dirty" jokes in mixed company ...

_____ are in bad taste.

_____ can be funny depending on the company.

8) Petting ...

_____ I am sorry to say is becoming an accepted practice.

_____ is an expression of affection which is satisfying

Remember: when rating your response 0 means NOT AT ALL TRUE (FOR) ME, and 6, means EXTREMELY TRUE OF (FOR) ME

9) Unusual sex practices ...

_____ are not so unusual.

_____ don't interest me

10) Sex ...

_____ is good and enjoyable.

_____ should be saved for wedlock and childbearing.

11) "Dirty" jokes in mixed company ...

_____ are coarse to say the least.

_____ are lots of fun.

12) When I have sexual desires ...

_____ I enjoy it like all healthy human beings.

_____ I fight them for I must have complete control of my body.

13) Unusual sex practices ...

_____ are unwise and lead only to trouble.

_____ are all in how you look at it.

14) Unusual sex practices ...

_____ are O.K. as long as they're heterosexual.

_____ usually aren't pleasurable because you have preconceived feelings about their being wrong.

15) Sex relations before marriage ...

_____ in my opinion, should not be practiced.

_____ are practiced too much to be wrong.

16) As a child, sex play ...

_____ is immature and ridiculous.

17) Unusual sex practices ...

_____ are dangerous to one's health and mental condition.

_____ are the business of those who carry them out and no one else's.

18) When I have sexual desires ...

_____ I attempt to repress them.

_____ they are quite strong

19) Petting ...

_____ is not a good practice until after marriage.

_____ is justified with love.

20) Sex relations before marriage ...

_____ help people adjust.

_____ should not be recommended.

21) Masturbation ...

_____ is wrong and a sin.

_____ is a normal outlet for sexual desire.

22) Masturbation ...

_____ is all right.

_____ is a form of self destruction.

23) Unusual sex practices ...

_____ are awful and unthinkable.

_____ are all right if both partners agree.

24) If I had sex relations, I would feel ...

_____ all right, I think.

____-was indulged in.

____ I was being used and not loved.

25) Masturbation ...

____ is all right.

____ should not be practiced.

Footnotes

¹ Seroprevalence refers to the prevalence within a given sample or population of the presence of antibodies to a virus (in this case HIV) detected through blood screening. The presence of the antibodies indicates that infection has occurred even if the individual is unaware of any symptoms.