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BEHAVIOR AND ATTITUDES RELATED TO THE
PREVENTION OF SEXUALLY TRANSMITTED
DISEASE AND UNPLANNED PREGNANCY

by

J. Lee Hoover

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
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and Counseling Psychology

Western Michigan University
Kalamazoo, Michigan
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BEHAVIOR AND ATTITUDES RELATED TO THE
PREVENTION OF SEXUALLY TRANSMITTED
DISEASE AND UNPLANNED PREGNANCY

J. Lee Hoover, Ed.D.

Western Michigan University, 1996

A sample of 214 persons was tested to determine the impact of gender role orientation, neuroticism, extraversion, authoritarianism, race, gender, and sexual orientation on attitudes and behavior relevant to the prevention of sexually transmitted disease and unintended pregnancy. Specifically measured was the impact of these factors on attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and reported condom use.

Gender role orientation was measured using the short form of the Bem Sex Role Inventory (BSRI) (Bem, 1978), neuroticism and extraversion were measured using the NEO-Five Factor Inventory (NEO-FFI) (Costa & McCrae, 1992), and authoritarianism was measured using the Authoritarianism Scale developed by Byrne and Kelly (1981). Attitudes toward the condom as a contraceptive were measured using the Attitude Toward Condoms Scale (ATCS) developed by Brown (1984). Attitudes toward the condom as a prophylactic were measured using the Condom

Attitude Scale (CAS) developed by Sacco, Levine, Reed, and Thompson (1991). Condom use was measured using the Condom Use Questionnaire (CUQ) Forms I and P developed by Sacco et al. (1991).

Data were analyzed through Multivariate Multiple Regression (MMR), Multivariate Analysis of Variance (MANOVA), and Analysis of Variance (ANOVA). When appropriate, univariate multiple regression was performed for specific dependent variables.

Analyses revealed that gender role orientation, neuroticism, extraversion, and authoritarianism all significantly impacted attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and condom use. A positive relationship was found to exist between extraversion and more favorable attitudes while an inverse relationship was noted between neuroticism and attitudes as well as between authoritarianism and attitudes. Masculine and feminine persons were observed to have less favorable attitudes toward the condom and to use it less frequently than those who had a nontyped gender role orientation. In each case, these findings were consistent with stated hypotheses. A significant impact was not, however, established for gender, race, or sexual orientation.

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How does one express gratitude to his mentor? It is because I do not know the answer that I find it so difficult to thank Dr. Morris. From my first day at Western I have directly benefitted from the example of this outstanding man. Dr. Morris has advised and guided me through every step of my doctoral career and has provided unwavering support in helping me to realize my most cherished dreams. His attention to my efforts is central to my success and I owe him so very much for all

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that he does to ensure that I move forward. I thank you, Dr. Morris, and I will do all I can to represent my department--and my mentor--in positive ways.

Finally, I dedicate my dissertation to the members of my family. Each of them has done so very much for me over the years of my life. Printed words cannot possibly express my profound sense of indebtedness, nor can they adequately convey my love. The best I can hope is that through achievements such as this I might continue to demonstrate their success in producing a worthwhile son, brother, and husband.

J. Lee Hoover

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CHAPTER I

INTRODUCTION

Statement of the Problem

HIV Disease and Acquired Immune Deficiency Syndrome (AIDS)

HIV disease, of which AIDS is a part, is now recognized as one of the most serious epidemics of our time (Goodwin & Roscoe, 1988; Ishii-Kuntz, Whitbeck, & Simmons, 1990; Sacco, Levine, Reed, & Thompson, 1991; Severn, 1990). Because AIDS is fatal and because no cure or vaccine for HIV disease will likely be available soon, society faces a formidable and devastating crisis (Austin, Hong, & Hunter, 1989). Indeed, while some groups remain at greater risk of contracting HIV relative to others (e.g., intravenous drug users or those with multiple sexual partners), it is spreading across society; it is crossing gender, sexual orientation, and other group boundaries (Severn, 1990; Simpkins & Eberhage, 1984).

Moreover, research has shown that in addition to (and partly as a result of) being a most calamitous

disease, there is notable public fear of HIV/AIDS. Many have been found to report more fear of casual contact with and less sympathy for people with HIV or AIDS as compared to people with other lethal diseases (Kelly, St. Lawrence, Smith, Hood, & Cook, 1987; Triplet & Sugarman, 1987). Skurnick, Johnson, Quinones, Foster, and Louria (1991) reported that although 82% of their sample believed HIV cannot spread via casual contact, over one third reported fear to attend school with a person with AIDS while 59% feared sharing a rest room with such a person. Similarly, Bruce, Shrum, Trefethen, and Slovik (1990) found that, when asked, about half of the college students in their study said they would move if they discovered a roommate had AIDS; roughly 40% were uncomfortable with the notion of being in the same room with a person who has AIDS. Such reactions exacerbate the already burdensome HIV epidemic.

Thus, research shows that the attitudes of many toward those who have contracted HIV disease are frequently negative. Similar trends are noted concerning hostility. For example, Bruce et al. (1990) found that almost half in their sample blamed the disease on the gay and lesbian communities. About a third felt the best way to eradicate AIDS is to eliminate sexual activity among gay people, while about 30% thought anyone with

AIDS should not be allowed to marry.

Croteau and Morgan (1989) cite evidence that since the onset of AIDS the harassment of gay people remains high. And, as reported by Joseph et al. (1984), many gay people continue to experience fear of public hostility.

Factors Impacting Attitudes About HIV Disease and AIDS

These attitudes have many sources. Royse, Dhooper, and Hatch (1987) report that much of the fear of AIDS may emanate from a lack of accurate knowledge about the disease and how it is spread. Austin et al. (1989) concur by asserting that popular misconceptions and inconsistent reports about AIDS have led to unrealistic fear of the disease. Many, for example, continue to believe that AIDS can be transmitted through such contacts as sharing a cup with a person with AIDS (Johnson, 1987). Indeed, Royse et al. (1987) report that accurate knowledge of AIDS is associated with less fear of the disease.

Goodwin and Roscoe (1988) found that accurate knowledge of HIV/AIDS is limited, resulting in the propagation of myths. Misconceptions and inaccuracies, coupled with a realization that AIDS is fatal, generates heightened emotions about the disease. Thus, fear and

hostility are promoted and many push to limit the access of persons with HIV/AIDS to society's mainstream.

Herek and Glunt (1988) concluded that negative attitudes amount to a stigmatization of persons with AIDS. They argued that this is due largely to the fact HIV/AIDS is contagious and incurable. Moreover, HIV/AIDS is largely associated with gay men and drug users, people treated as outcasts and with contempt and fear prior to the onset of AIDS. By association then, anyone with HIV/AIDS, regardless of how contracted, is often stigmatized and treated as an outcast unworthy of concern or support.

Furthermore, following the first diagnoses of AIDS the syndrome was framed negatively by popular media. Terms like "gay plague" or "gay cancer" were used in reference to the disease (Goodwin & Roscoe, 1988; Witt, 1989). Negatively charged labels impacted the formation of early public attitudes and promoted the view of AIDS as a problem of select groups. In this way the stage was set for HIV/AIDS to be treated as "someone else's" problem and not as a problem that belongs to everyone.

Indeed, while it is unclear that the onset of HIV disease has directly resulted in a substantial increase in homophobia, the disease may give some the justification they feel is required to more vigorously express

a fear or hatred of gay people (Schneider, 1987).

Croteau and Morgan (1989) observed that, by construing AIDS as a problem of only certain people, a prevailing mentality has resulted wherein many see issues surrounding the disease in terms of "us versus them," or "average" people versus the indecent or blameworthy. In this way, persons (e.g., gay men) and issues (e.g., prophylaxis) are identified as belonging to a category separate from the general population. People and issues so categorized are then treated as part of an outgroup and are excluded from mainstream consideration.

Goodwin and Roscoe (1988) identified other consequences of this polarization. They pointed to the many acts of harassment and violence directed toward gay persons and organizations, particularly since the outbreak of HIV and AIDS. They also reported that health care providers often refuse services to people with AIDS. Thus, persons with HIV/AIDS are too often subjected to harmful reactions.

It is apparent, then, that persons with HIV/AIDS must not only contend with the catastrophe of the disease; they must wrangle also with negative attitudes in the public. And, as Heaven, Connors, and Kellehear (1990) point out, having to cope with negativity can be just as trying as the disease itself.

Another important ramification of the us-versus-them mindset is discussed by Croteau and Morgan (1989). These authors point out that when AIDS is seen as someone else's problem, people are less concerned about examining their own behaviors which might put them at risk for contracting the disease. The tendency, instead, is to focus on those perceived as belonging to the identified outgroup and to see them as a threat. Thus, by blaming others, people avoid taking meaningful ownership of the HIV/AIDS problem and do not frankly examine personal practices and decisions which impact risk potential.

This dualistic mindset helps perpetuate a fear of HIV/AIDS and of those associated it (e.g., gay men or intravenous drug users). One sees "them" as a threat and will fail to acknowledge that his or her own actions are the actual source of risk. It is in this way that people fail to accept the challenge of HIV. Personal behavior and decisions relevant to AIDS (e.g., protected sex) go unnoticed and unchanged. Thus, the negativity and fear about HIV-related issues is unchallenged or even reinforced (Croteau & Morgan, 1989).

Relevant to this is Rudolph's (1989) assertion that, when given exposure to stigmatized groups, individuals' negative attitudes toward those groups tend to

be modified positively. He cited the work of Anderson (1981) and Maclaury (1984) demonstrating that positive attitudes toward lesbians and gay men are, in fact, promoted by exposure to and information about them. Rudolph's own finding that positive attitudes about gay people are fostered by adequate exposure is in agreement.

Such conclusions indicate that when people avoid contact with gay men and lesbians the formation of positive attitudes toward them is hampered. The same is true concerning the myriad other issues surrounding HIV/AIDS, including condom use. Positive attitudes are not encouraged when people avoid personal and meaningful experience of the disease and its associated issues. Indeed, Grieger and Ponterotto (1988) found that closeness to gay people promotes positive AIDS attitudes in general.

Thus, previous work evidences that AIDS and sexual orientation are linked in the minds of many. Not surprisingly, then, attitudes about HIV/AIDS and about lesbians and gay men are related. Fear and contempt of persons who are gay have repeatedly been linked to negative AIDS attitudes (Austin et al., 1989; Goodwin & Roscoe, 1988).

For example, Austin et al. (1989) demonstrated that

the most important contributor to participants' fear of AIDS was their fear of the gay and lesbian orientations; the more contemptuous and fearful individuals exhibited more fear of the disease. Similarly, Witt (1990) cited evidence that negativity toward persons with HIV/AIDS may be due more to personal predispositions, especially fear of lesbian and gay sexual orientations, than to misinformation about the disease. Likewise, Triplet and Sugarman (1987) and Larsen, Elder, Bader, and Dougard (1990) reported that persons' attitudes toward people who are lesbian or gay are central to their attitudes toward anyone living with HIV or AIDS.

Many personal factors have been found to contribute to this negativity. For instance, people who hold conservative religious and political views tend to fear and reject those with HIV/AIDS (Hong, 1984; Johnson, 1987). In 1987, Johnson found that people aligned with religious fundamentalism tend to have minimal tolerance for persons with AIDS and to be largely sympathetic to conservative political concerns with an antigay agenda.

Importantly, negative attitudes are fostered by the view that HIV/AIDS is a disease impacting outgroups (Croteau & Morgan, 1989; Witt, 1989). While many tend to be suspicious and distrustful of outgroups (as evidenced by the cited works of Bruce et al., 1990; Kelly

et al., 1987; and Skurnick et al., 1991), bias against and intolerance of persons in such groups is marked in the authoritarian personality (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950, 1982).

Due to the association of AIDS with outgroups, many people, and especially authoritarian individuals, are prone to biases and negative attitudes regarding HIV/AIDS and related issues. And, while most find uncertainty and ambiguity unpleasant, people with authoritarian traits find such especially aversive (Witt, 1989). Therefore, due to the confusion, misunderstanding, and ambiguity surrounding HIV/AIDS, their marked intolerance of uncertainty, like their pronounced bias, predisposes authoritarians to especially negative attitudes (Witt, 1989).

Unplanned Pregnancy

Just as the onset and spread of HIV disease and AIDS is alarming, an equally alarming fact is that, as humankind moves into the last years of this century, large numbers of sexually active individuals continue to use unreliable contraceptive methods (e.g., foam, withdrawal, or rhythm) or take no precautions at all (Bruch & Hynes, 1987; Geis & Gerrard, 1984; Zelnick & Kantner, 1980). Disturbingly, it has been reported that the

young are especially irregular contraceptors (Fox, 1977; Tanner & Pollack, 1988). Sadly, by some estimates at least 50% of all sexually active, heterosexual young people do not consistently use contraception (Brown, 1984). Moreover, some findings indicate that over 90% are inconsistent users of the condom, one of the most effective devices available (Grieco, 1987; Kegeles, Adler, & Irwin, 1988; Strunin & Hingson, 1987).

Although used inconsistently, the condom is the most widely employed of the many available methods of contraception (Baffi, Schroeder, Redican, & McClusky, 1989; Brown, 1984; Grieco, 1987; MacCorquodale, 1984). It has been found that among young persons who engage in male-female sexual intercourse, when the use of a contraceptive is elected (albeit irregularly), the one chosen most frequently seems to be the condom (Brown, 1984).

Because the condom is such an effective contraceptive yet is underused, it behooves researchers and clinicians to better understand the variables that influence its use. A better understanding of condom usage and how it is influenced may help professionals develop interventions that will increase the frequency and consistency with which the device is utilized as a contraceptive.

It is clear that many individuals are at great risk of exposure to any of the several unpleasant results of inadequately protected sexual activity. Inadequate or absent contraception contributes to at least 1,000,000 unwanted pregnancies per year (Foege, 1981; Whitley & Schofield, 1986). These unwanted pregnancies are frequently followed by abortion (Andres, Gold, Berger, Kinch, & Gillett, 1983), disruptions in educational and vocational plans (Baizerman, Sheehan, Ellison, & Schlessinger, 1971), hurried weddings often followed by divorce (Semmens, 1970), and social repudiation (Black & DeBlassie, 1985). Such misfortunes are made all the more intolerable by the fact that there exists a contraceptive technology which, when implemented properly, could nearly eliminate most all of them (Whitley & Schofield, 1986).

Further, Tanner and Pollack (1988) report that inconsistent use of protective devices (especially inconsistent use of the condom) can lead to an increased risk of spreading or contracting sexually transmitted diseases (STDs). The U.S. is currently witness to an unprecedented STD epidemic which seems to be steadily worsening (Grieco, 1987). This epidemic is especially difficult to tolerate at a time when the condom, which could have a profound impact on STD incidence rates, is

widely available but underutilized (Grieco, 1987).

Indeed, unlike any other device available today, the condom can prevent an exchange of most relevant bodily fluids during sexual intercourse. This is a very important feature, especially in light of the fact that AIDS and most all other STDs are transmitted through just such an exchange. The dual role of the condom--that of contraceptive and prophylactic--makes it an especially unique and advantageous device. For this reason, professionals must gain a better understanding of factors impacting its use, for not only would such an understanding provide leverage against the problem of unplanned pregnancy, but it would also help in the fight against the spread of AIDS and other STDs.

The need for better understanding is especially urgent when one considers the fact that the condom possesses a great number of other clear advantages over many widely available methods of contraception and prophylaxis. These advantages include (a) reliability, (b) availability without a prescription, (c) low price, (d) safety, (e) the aforementioned dual role as barrier against STDs and pregnancy, and (f) its use requires little preplanning, making it ideal for those who engage in sexual intercourse sporadically, as do many young adults (Baffi et al., 1989; Brown, 1984).

Significantly, in 1986 the U.S. Department of Public Health endorsed the condom as one of the most effective means of preventing the spread of AIDS (Sacco et al., 1991). And, a central component of campaigns designed to check the spread of the disease has been to promote use of the condom (Sheeran, Abraham, Abrams, Spears, & Marks, 1990). In light of the widely recognized importance and utility of the condom as prophylactic, it is indeed wise to work toward an improvement in our understanding of persons' use of the device. For, as pointed out by Stewart, Deforge, Hartmann, Kaminski, and Pecukonis (1991), while the condom is widely promoted as an effective AIDS-preventive device, it cannot work if it is not employed.

Factors Impacting Condom Use

Unfortunately, even when persons are aware of its advantages, many continue to use the condom only irregularly (Catania et al., 1989; Grieco, 1987). Therefore, simply recognizing the advantages of the condom is clearly not enough to ensure that couples will use it consistently. It must be that other variables also impact use of this device.

Many variables have been identified as influential in a person's or a couple's decision to employ or not

to employ condoms. Among the various categories of variables, demographics have received considerable attention. Some specific demographic variables that have proven relevant to research of this type include race (e.g., DiClemente, Zorn, & Temoshok, 1987; Stevenson & Stevenson, 1990), gender (e.g., Bruce et al., 1990; DiClemente et al., 1987; Hong, 1984; Larsen, Reed, & Hoffman, 1980; Lester, 1989; Skurnick et al., 1991), and sexual orientation (e.g., Leviton et al., 1990; Ross, 1988a; Stevenson & Stevenson, 1990; Temoshok, Sweet, & Zich, 1987).

In addition to these, there are some especially crucial variables have not received much attention. In particular, persons' attitudes toward the condom have not been fully explored. This is unfortunate because attitudes toward the condom have a profound effect on usage. Sound predictions about one's use of the condom can be made based on his or her attitudes toward it (Andres et al., 1983; Baffi et al., 1989; Brown, 1984; Bruch & Hynes, 1987; Byrne & Fisher, 1983; Geis & Gerrard, 1984; Ross, 1988b; Tanner & Pollack, 1988).

Studies have found that many people who irregularly use prophylactics and contraceptives feel the devices are too troublesome or that they interfere with sexual pleasure (Baumann, 1971; Evans, Selstad, & Welcher,

1976; Goldsmith, Gabrielson, Gabrielson, Mathews, & Potts, 1972; Grieco, 1987). Valdiserri et al. (1988) concluded that the most salient difference between a group of persons who never used condoms and a group who always used condoms was the perception of whether condoms "spoil" sex. In fact, this attitudinal variable discriminated between the users and nonusers to a greater extent than their knowledge about AIDS and its transmission.

Indeed, according to Sacco et al. (1991) unprotected sex has consistently been related to the attitude that sexual activity wherein partners use a condom is unsatisfying. These authors go on to point out that unprotected sex is often accompanied by a generally negative attitude toward the condom.

Based on these and other works (e.g., Byrne, 1977; Byrne & Fisher, 1983; Geis & Gerrard, 1984) one may conclude that one of the most important factors mediating use of the condom is attitudes toward the device. And, these attitudes are, in turn, influenced by many factors. Therefore, to influence use, professionals must influence attitudes; to influence attitudes, professionals must come to an understanding of how the attitudes are impacted by particular variables.

Purposes of the Study

It is clear that unplanned pregnancy is a major challenge confronting U.S. society. However, this challenge can, fortunately, be effectively addressed through improved condom use. Specifically, with a better understanding of attitudes toward and use of the condom as a contraceptive, professionals will be better equipped to help individuals more effectively avoid unplanned pregnancies. The present study is meant to improve understanding by investigating the effects of several variables that impact attitudes but have nonetheless received inadequate attention by researchers to date.

Moreover, it is a fact that any currently sexually active person can contract HIV and eventually develop AIDS. And, there is overwhelming evidence that HIV disease is spreading across most segments of society. Behavior and circumstance, not just affiliation with an at-risk group, make HIV disease every person's problem (Bruce et al., 1990). Therefore, professionals must work with an appreciation for those factors known to contribute to the belief that HIV/AIDS is a disease of others or outgroups; we must work to better understand reasons why many have often met the challenge of AIDS in less than constructive and helpful ways.

Indeed, in their examination of ways to combat homophobia in AIDS education, Croteau and Morgan (1989) called upon professionals to be more inclusive concerning ways the disease is considered. They explored many negative and detrimental effects the historic us-versus-them mindset has had on public attitudes and responses toward people who are gay or lesbian and toward HIV-related issues. Only by encouraging that everyone take personal and meaningful ownership of the problem of HIV can professionals devise more effective strategies in the fight against it. We must improve our understanding of the polarized nature of perceptions concerning AIDS issues. Specifically, professionals must more fully explore how AIDS issues are seen as "their" problem or as a problem brought upon "us" by "others." Individuals must be helped to realize that personal behavior and decisions place everyone at risk for contracting the disease. It is in this way that persons may come to see AIDS as not something inflicted upon them from without, but rather as a disease that everyone can very personally avoid or prevent.

Thus, a more detailed understanding of problematic attitudes and of their consequences must be achieved if we are to help members of the public confront AIDS in a more effective manner. Specifically, a clearer and more

detailed picture of the variables underlying attitudes toward and use of the condom as an AIDS-relevant device must be made available. This, because the condom is a valuable but underused prophylactic in the fight against AIDS and other STDs. And because, in spite of its value, many seem to disregard the condom in its capacity as prophylactic.

Importantly, most studies to date have tended to focus on attitudes toward and use of the condom as a contraceptive, thereby ignoring important implications variables might have for those who are concerned primarily or exclusively with disease prevention instead of birth control. Thus, the literature's emphasis on the condom as contraceptive, while having done much to enhance our knowledge of mostly heterosexual individuals and condom use in heterosexual scenarios, has tended to disregard same-gender sexual activity. This trend has done much to marginalize gay men and others who would consider use of the condom for its prophylactic, not contraceptive, properties. Hence, the present study is meant to improve knowledge by providing much needed data concerning issues impacting prophylactic-related attitudes and use, areas that have typically not received adequate consideration.

By examining attitudes in both the contraceptive

and prophylactic domains, this study is meant to provide a unique means through which to compare and contrast the roles of various factors. This should be especially helpful in aiding the ongoing and closely aligned attempts to curb both unplanned pregnancy and the incidence of AIDS. Thus, the present study is meant to provide a unique way to "bridge the gaps" in our current understanding of the roles played by various factors in condom attitudes and use within these two important areas.

As noted, the condom is a particularly crucial and versatile device. And, as Severn (1990) argues, educating the public about its advantages is not enough. She stated that it is important for the professional, when focusing on the change of risky sexual behaviors, to consider persons' attitudes in addition to their knowledge. Condom use is but one component of a spectrum of issues associated with safe sex. Therefore, if interventions are to be made more effective, attitudes specifically toward the condom must also be considered.

This is especially true when one takes note of the fact that, in spite of the problems of unplanned pregnancy and AIDS, large numbers of persons have failed to change their sexual behavior (Ishii-Kuntz, Whitbeck, & Simmons, 1990). This highlights the fact that condom

use is a complex, multidetermined phenomenon, one that is mediated by several factors.

As noted, authoritarianism has been well documented as a personal trait that negatively impacts attitudes toward AIDS issues and toward those living with the disease. While one may assume that this factor similarly impacts prophylactic attitudes toward and use of the condom, previous research has not investigated whether this is actually the case. Consequently, the present study is meant to determine the extent to which this factor mediates attitudes toward and use of the condom as prophylactic.

Further, the influence of authoritarianism over attitudes toward and use of the condom in contraceptive situations is undocumented. Thus, professionals find themselves once more at a disadvantage in understanding and describing how this factor might influence contraception as compared to prophylaxis. The present study, then, is meant to provide the needed information upon which to judge the impact of this variable upon contraceptive use of the condom.

Several other personality variables have been shown to influence use of the condom in contraceptive situations. Specifically, neuroticism has been shown to coexist with less frequent use of the device, as have

introversion and traditional gender role orientations (e.g., Bruch & Hynes, 1987; Catania et al., 1989; Cvetkovich & Grote, 1981; Fox, 1977; Marsiglio & Menaghan, 1987). The impact of these variables on attitudes is not as substantiated in the current literature. The present study, therefore, is meant to provide information on how these factors influence not only use of but also attitudes toward the condom as contraceptive.

Importantly, previous research regarding the effects upon condom use of neuroticism, extraversion, and gender role orientation has been limited to contraceptive situations. How these factors influence condom use and attitudes in prophylactic situations must, then, be made more clear.

In these ways, the present study is intended to provide a unique comparison of the relative impact of several personality factors widely reported as vital in the attitudes people hold toward the condom and other sex-related issues. Specifically, this study considers the simultaneous and singular impacts of these factors upon attitudes toward and use of the condom as contraceptive versus prophylactic. And particularly by examining these issues with regard to prophylactic situations, the present study is meant to provide a much needed contribution to the literature.

The Condom as Contraceptive and Prophylactic

Most studies that have investigated attitudes toward the condom as either a contraceptive or a prophylactic have not considered the possible differences in attitudes depending on the reasons for usage. It may be that different attitudes are crucial in the two, rather different situations. Various factors that have been shown to influence attitudes toward condoms and toward other AIDS-related issues may become more or less salient depending on the purpose behind the use. A particular personality factor, for example, may have a more strongly negative impact on condom attitudes in a contraceptive situation than in a prophylactic situation. Such an assessment is difficult to make based on the current literature.

Indeed, in their 1991 study, Sacco et al. called for further research to investigate possible differences in attitudes toward condom use in these different situations. These authors pointed out that research on the condom as a contraceptive, although suggestive, is limited in its applicability to the question of how attitudes and use are influenced when the device is intended for prophylaxis. It becomes important therefore, to examine condom use as a specifically prophylactic

behavior and to contrast this with its use as a contraceptive.

Impact of the Selected Factors on Condom Use

In addition to assessing the impact of the selected factors (viz., neuroticism, extraversion, authoritarianism, and gender role orientation) on attitudes toward the condom as contraceptive versus prophylactic, the present study is designed to improve knowledge further by determining their impact on actual condom use. Specifically, the impact each factor carries was assessed in the various conditions under which each participant reported that he or she might use a condom in the future. Additionally, the present study assessed the impact of these factors in past situations in which the participant reported he or she actually used a condom.

By considering past and future condom use, a more complete and thorough picture of actual use was created. The ways in which the chosen factors impacted use could then be measured with accuracy.

In sum, the present study investigated the impact of several personal factors on attitudes toward the condom as contraceptive versus prophylactic and participants' actual use.

Definitions of Key Terms

Attitude

According to Fishbein and Ajzen (1975) an attitude is an affective and evaluative response to an object. It is multidimensional, comprised of beliefs, cognitive appraisals, emotions, and assumptions. At the very foundation of an attitude is a belief or set of beliefs. According to the authors, this foundation determines the nature of the attitude, as well as the person's intentions and behaviors directed toward the object of that attitude.

In the end, the attitude is understood to contribute to one's intentions and behaviors concerning the attitude's object. Specifically, the belief determines the attitude, which then determines intention and ultimate behavior (Fishbein & Ajzen, 1975).

Condom Use

In the present study condom use is defined as being comprised of two components originally advanced by Sacco et al. (1991). For a fully accurate and complete appreciation of condom use one should include consideration of persons' intent to use a condom in future situations and the extent to which they have actually used condoms

during sexual encounters in the past.

Thus, condom use is conceptualized as a two-pronged phenomenon. Both of these components must be considered in order to develop a full understanding.

Authoritarianism

In the present study, the definition of authoritarianism as a personality trait is based primarily on the work of Adorno et al. (1950, 1982). Therefore, in accordance with these authors, authoritarianism is viewed as a system of values and beliefs which predispose a person to direct biased views toward members of outgroups and to desire to punish those who violate conventional values. The authors also characterize the authoritarian as one who is typically very concerned about sexual matters. Further, the term is meant to describe a tendency toward dogmatism, behavioral rigidity, and an intolerance of ambiguity (Witt, 1989).

Neuroticism

In the present study, neuroticism is operationally defined in accordance with the work of Costa and McCrea (1992). This factor is understood, therefore, to reflect a state of general psychological distress. The distress is comprised chiefly of a range of negative

affect that includes fear, anger, sadness, embarrassment, guilt, and disgust. However, the presence of high levels of neuroticism implies more than a mere susceptibility to these forms of psychological disturbance. A high degree of neuroticism also entails relatively poor adjustment to life situations in general; people who are highly neurotic tend to be less able to control their impulses and to cope effectively with stressors than those who are not highly neurotic.

Extraversion/Introversion

As with neuroticism, the operational definition for this trait is drawn from research by Costa and McCrea (1992). Thus, extraverted people are recognized as being generally assertive, energetic, optimistic, and physically active. Sociability is also a key trait in that people who are extraverted also typically enjoy the company of others and take pleasure from being active members of large groups. Moreover, they tend to like people, to have a cheerful disposition, and to be relatively talkative.

In contrast, introverted individuals tend to experience an absence of the traits characteristic of extraverted people. Importantly, however, those who are introverted do not necessarily display personality

traits opposite to those described above. This is to say, then, that introverted people are reserved rather than unfriendly; they are independent rather than detached and are even-paced rather than sluggish. Moreover, instead of being shy or aloof, introverted individuals are understood to have a preference for being alone; they value solitude and do not necessarily experience social anxiety. Hence, though they are not given to the gregariousness, high spirits, or exuberance often displayed by extraverts, people who are introverted are not cold, pessimistic, nor are they unhappy. The more accurate view is that introverted people often simply prefer to be alone rather than to actively dislike the company of others.

Gender Role Orientation

According to Bem (1981), many in contemporary American culture have come to regard certain clusters of personal traits as more characteristic of and more desirable for either males or females. These clusters are comprised of a wide variety of traits and are considered mutually exclusive (i.e., belonging either to males or females). As such, they represent cultural definitions and idealized standards of what it is to be masculine and feminine. These dichotomous definitions

or standards have resulted in widely accepted cultural expectations and prescriptions regarding "appropriate" behavior, aspirations, and roles for members of either gender.

Regarding gender role orientation, the present study distinguished between "gender-typed" and "non-gender-typed" individuals. Gender-typed individuals were defined as having a gender role orientation that was either masculine or feminine. These persons are understood to be highly attuned to the cultural definitions and expectations of masculine and feminine persons. This sensitivity leads them to behave and to perceive themselves in ways that are consistent with cultural prescriptions; such persons are presumed to select behaviors and enhance personal attributes commonly associated with either females or males (Bem, 1981).

Conversely, nongender-typed individuals were defined as having a gender role orientation that was either androgynous or undifferentiated. Androgynous and undifferentiated persons are understood as not being highly attuned to the common cultural definitions of and expectations for the genders. For this reason, these persons are less likely to regard their behavior and to see themselves in accordance with culturally prescribed

roles. Operationally, androgynous persons tend to exhibit high numbers of both masculine and feminine traits while those with undifferentiated orientations exhibit low numbers of masculine and feminine traits (Bem, 1981).

Expected Results

In formulating the present study, it was expected that attitudes toward the condom as prophylactic would be more negative among individuals who exhibit higher levels of authoritarianism. Some previous research has shown this to be the case with respect to various other AIDS issues--primarily with attitudes toward persons with AIDS. This prediction was derived from the noted negativity these individuals associate with AIDS as a problem of "outgroups" and from the consternation and contempt with which they view same-gender sexual activity. Their attitudes toward the condom as a contraceptive were also predicted to be more negative than positive even though contraception might tend to be seen as a more "mainstream" issue. This prediction arises from the general tendency of these persons to regard with marked contempt those activities (e.g., recreational or nonprocreative sex) they consider to be in violation of cultural mandates or morality. Moreover, these persons

were expected to make less use of the condom than individuals low on authoritarianism.

These expectations were necessarily conjectural because previous research has not considered the impact of authoritarianism on attitudes toward and use of the condom as either prophylactic or contraceptive. Research has instead tended to focus on the impact this variable has on attitudes toward persons with AIDS, or toward the disease itself. It was therefore important to assess the impact of this personality factor on condom-related attitudes and use in the two allied areas of contraception and prophylaxis.

Additionally, neuroticism, introversion, and the masculine and feminine gender role orientations were expected to adversely impact attitudes toward the condom as prophylactic and contraceptive. Previous research investigating these factors' impact on the contraceptive use of the condom suggested this might be the case. However, their influence on attitudes toward and use of the condom, is not as substantiated or clear.

In contrast, extraversion, low levels of neuroticism, and nontyped gender role orientation were expected to positively influence attitudes toward the condom as a prophylactic and contraceptive. This, too, was suggested by the previous research that investigated these

factors' impact on contraceptive condom use. But, once again, their influence on actual attitudes and prophylactic use was not as substantiated or clear.

As is customary in this line of research, several demographic variables were included to discern their potential affects on attitudes and use. Race, gender, and sexual orientation were each predicted to be significant predictors of attitudes and use. Past research has shown that these variables often impact issues similar to those addressed in the present study.

Importantly, prior to this study there had been no evidence collected that was meant to specifically contrast how any of these factors may influence attitudes toward the condom as a prophylactic. For this reason, the present study investigated possible effects of all these variables in the realm of prophylaxis as well as contraception. When compared with their effects on attitudes toward the condom as contraceptive, it was expected that the influence of these variables on prophylactic attitudes would follow similar lines. But, due to the lack of research on attitudes toward the condom as prophylactic, firm conclusions concerning their impact in this area could not be drawn.

Also, by explicitly assessing condom use patterns, the present study was intended to make possible a

determination of the relative impact the identified traits have on behavior. Higher scorers on a measure of authoritarianism were expected to report little use of the condom relative to lower scorers. Relatively little use was also predicted to be found among those scoring in the directions of neuroticism, introversion, and the traditional gender role orientations. In contrast, persons who are not gender-typed, who score low on a measure of authoritarianism, and who are nonneurotic and extraverted were expected to use the condom more frequently.

Operational Hypotheses

The expected results of this study generated the following operational hypotheses:

1. There will be significant differences between gender-typed and nongender-typed individuals for the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use.
2. There will be significant gender differences for the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use.
3. There will be significant race differences for

the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use.

4. There will be significant sexual orientation differences for the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use.

5. The linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation will be a significant predictor of attitudes toward the condom as contraceptive.

6. The linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation will be a significant predictor of attitudes toward the condom as prophylactic.

7. The linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation will be a significant predictor of reported condom use.

CHAPTER II

REVIEW OF THE LITERATURE

Among the many factors that have been demonstrated to influence persons attitudes toward AIDS-related issues, of particular interest in the present study are authoritarianism, neuroticism, extraversion, and gender role orientation.

Effects of Authoritarianism on AIDS-related Issues

Cunningham et al. (1991) found that persons in their study who had negative attitudes toward those living with AIDS were typically nonnurturant, authoritarian males "of limited intelligence." Such persons also exhibited absolutist thinking on issues of right and wrong and tended to be self-righteous. These authors conclude, then, that authoritarianism and its related traits are predictive of negative attitudinal responses toward persons with AIDS.

Adorno et al. (1950) report that authoritarians tend to reject and work to punish people who violate what they see as conventional social norms and values. These authors also contend that authoritarians have an

exaggerated concern for sexual matters. Hence, as Cunningham et al. (1991) pointed out, such attributes make the authoritarian especially prone to directing hatred and contempt toward persons with AIDS. This is because AIDS is traditionally perceived as a disease impacting those who are gay or lesbian and of those who are members of other outgroups, such as users of illicit drugs. Indeed, the rejection of people who are gay or lesbian and of persons with AIDS can be seen as a part of the general tendency noted by Larsen et al. (1980) for authoritarians to reject most all outgroups.

Researchers widely agree that authoritarianism is an important predictor of negative attitudes toward AIDS issues. For example, in 1989 Witt found authoritarianism to be significantly associated with negativity toward persons with AIDS. Similarly, Larsen et al. (1990) reported significant correlations between scores on a measure of authoritarianism and attitudes toward persons with AIDS. And again in 1990, one year after his original study, Witt concluded that negativity toward AIDS is likely a function of one's perception of persons with AIDS as members of outgroups. This assertion shows that with continued research Witt remained assured that authoritarianism is crucial in the understanding of negative attitudes toward persons with AIDS.

Authoritarianism, therefore, seems to be a salient variable impacting AIDS-related attitudes. The proposed study will further clarify the role of this important personality factor by exploring the effects of authoritarianism on attitudes toward and use of the condom as a prophylactic. In this way, the proposed study will provide the needed understanding and appreciation of the role played by this personality trait in this crucial and understudied area.

Attitudes Toward the Condom and the Effects of Extraversion and Anxiety

Research investigating the effects of extraversion and anxiety on attitudes toward the condom has historically focused on the device as contraceptive. As such, investigators have tended to disregard the condom's prophylactic properties and to marginalize the interests of those primarily concerned with disease prevention during sexual intercourse. And, though previous research is suggestive of what important dynamics might underlie attitudes toward and use of the condom as prophylactic, it is simultaneously limited in this regard by its narrow scope. The following review, then, must necessarily reflect this limitation while recognizing that the literature does offer possible implications for attitudes

as they relate to the condom as prophylactic.

Byrne and Fisher (1983) state that negative attitudes toward contraception in general can disrupt the behavioral steps one must take to acquire and use a particular contraceptive. These authors have developed a model of contraceptive behavior that establishes a link between attitudes and contraceptive use. According to the model, there are several steps in a behavioral sequence that may result in the use of a contraceptive. Namely, the person who intends to use a device must (a) learn about the availability and use of a particular contraceptive, (b) admit that the occurrence of male-female sexual intercourse is likely, (c) take public action to obtain the device, (d) communicate with his or her partner concerning its use, and (e) the device must actually be employed during sexual activity. The authors contend that negative attitudinal responses at any one point in this sequence may impede progress through these steps, thus interfering with or preventing the acquisition and use of a contraceptive. The more negative a person's attitude, the more likely he or she is to risk pregnancy by not attending to his or her contraceptive needs (Byrne, 1977).

Geis and Gerrard (1984) are in agreement with the opinion that attitudes are an important variable

mediating the use of the condom as contraceptive. They found that effective use of contraception is related to positive attitudes toward particular contraceptives. These authors stated that the understanding of attitudes toward specific contraceptive devices is very important in understanding contraceptive choice and behavior. If a person holds positive attitudes toward a specific device, the professional can more accurately predict that person will regularly use the device. This is consistent with the findings of Fishbein and Ajzen (1975) and Kelman (1974), who report that attitudes toward specific matters predict subsequent behavior better than more general attitudes. Brown (1984) builds on this reasoning by suggesting that research should focus more on attitudes toward specific devices and less on attitudes toward contraception in general.

In spite of these arguments, most research in this area has examined contraception in general, without distinguishing among the different methods and devices. This is unfortunate because such an approach ignores the possible unique factors, and combinations of factors, that may be related to specific contraceptives. Such an approach also ignores contentions that attitudes toward specific devices are better predictors than attitudes toward contraception in general. And, importantly, this

approach ignores the fact that some contraceptive methods are not effective in the prevention of STDs. By focusing on contraception, a better understanding of prophylaxis has been hindered.

For these reasons, and because the condom is the most popular and effective device, the proposed study will examine attitudes specifically toward the condom as both contraceptive and prophylactic.

Researchers have identified several variables that influence attitudes toward the condom and other devices. Their findings have established that the individual's personality style (or style of interaction) and his or her gender role orientation are particularly salient.

One's interaction style has been found to greatly influence his or her use of the condom. In one study, Cvetkovich and Grote (1981) found that participants who communicated well tended to use condoms with greater frequency than those who were poor communicators. The authors contend that the condom requires effective communication because the partners must express their desire for and negotiate its use before and during the sexual encounter. This can be compared to the use of a coitus-independent method (e.g., the pill) whereby the partners would not need to discuss its use with each encounter. Those participants who used the condom

regularly were distinguished from nonusers by their pronounced ability to effectively communicate with their partners the need to engage in protected intercourse. Moreover, condom users were found to have the highest level of general communication skills of all the participants.

Consistent with this finding, Catania et al. (1989) contend that, once the person has decided to use a condom, negotiation with his or her partner is required. This negotiation, of course, involves bilateral decision making and requires, therefore, the person have at least basic sexual communication skills. Their findings indicate that the inability to assert oneself may be associated with difficulty in engaging in protected sexual practices. They also report that participants in the study who used condoms more frequently asserted their desire to do so better than those who used them less frequently. They conclude that a greater willingness to assert oneself and good communication skills were associated with a desire to use condoms more regularly.

Anxiety has also been found to be an important personality factor. Bruch and Hynes (1987) report that participants who experienced high levels of anxiety in interpersonal situations were less likely to discuss contraception prior to sexual intercourse. Anxious

participants experienced more negative attitudinal responses to devices and were less likely to initiate use of a device than participants who manifested lower levels of anxiety. These negative attitudes, spurred by their anxiety, prevented them from engaging in the behaviors required to effectively use devices during sexual encounters.

Similar findings are reported by Andres et al. (1983). These authors admit that anxiety about sexual matters is an excellent predictor of failure to use contraception. Like Bruch and Hynes (1987), these authors state that anxiety seems to be linked to negative attitudes toward and less effective use of contraceptives.

Finally, using a modified version of the Attitude Toward Condoms Scale (Brown, 1984) along with measures of mood states and personality, Ross (1988b) concluded that the most important variables associated with participants' positive attitudes toward the condom were an assertive personality style and the ability of the person to raise the issue of condom use during sexual encounters without fear of rebuff. He found those with the most positive attitudes toward the condom had personality styles described as self-confident, competitive, independent, assertive, determined, and forceful. Those with the most negative attitudes toward the condom

were described as submissive, conflict-avoiding, changeable, nonassertive, unassuming and generally anxious.

Together, these findings indicate that positive attitudes toward contraception and condoms coexist with an outgoing personality style, good interpersonal skills, and regular use. They also suggest that negative attitudes toward the condom as contraceptive are associated with a withdrawn personality style, anxiety, relatively poor interpersonal skills, and irregular use. However, the impact of neuroticism and extraversion upon attitudes toward and use of the condom as prophylactic has not been previously assessed.

Effects of Gender Role Orientation on Attitudes Toward the Condom

It has been established that the gender role orientation of individuals also influences attitudes toward the condom. Notably, as with research on the effects of the previously discussed variables, most studies concerned with the effects of this factor have focused on attitudes toward the condom as contraceptive. This limited, though suggestive, nature of the literature must be kept in mind. It also further highlights the need for direct investigation concerning attitudes toward the condom as prophylactic.

Researchers have shown that men and women with androgynous orientations seem to have more positive attitudes toward contraception than those more traditionally oriented (Eagly & Anderson, 1974; Osborn & Silkey, 1980). Russo (1976) states that the traditional gender role for females stresses marriage and motherhood as appropriate careers for women. Such roles may well decrease use of contraceptives and increase negative attitudes toward them. This would be consistent with findings that women subscribing to nontraditional gender roles are more frequent and effective users of contraception than those holding traditional gender roles (Fox, 1977; Hansson, Jones, & Chernovetz, 1979; MacCorquodale, 1984). Indeed, some contend that women with traditional gender role orientations may not be as concerned with the possibility that their lives could be disrupted by an unplanned pregnancy (MacCorquodale, 1984).

Similarly, Scanzoni (1976) concluded from his findings that women with traditional gender role orientations are more likely to perceive life's major rewards as coming from marriage and motherhood. He states that androgynous females, in contrast, do not consider motherhood to be as rewarding and may prevent pregnancies in order to seek more rewards from other areas of

life. He also concludes that the gender role orientation of both parties in the relationship has an impact on birth intentions. Scanzoni found that androgynous heterosexual couples frequently intend to have fewer children than those in which both people hold traditional gender roles. He concluded that androgynous couples more typically find greater rewards in areas of life other than parenthood. Therefore, they are more effective contraceptors, exercising more careful restraint over their reproductive abilities.

Consistent with this, MacCorquodale (1984) found that both females and males with androgynous gender role orientations were more likely to discuss the use of a contraceptive with their partners. She, like Scanzoni before her, found that nontraditionally oriented people of both genders were more frequent users of contraception than those with traditional orientations--use that no doubt stemmed from these individuals' higher frequency of discussion of contraception.

Their attitudes seemed to differ as well. Non-traditionally oriented persons seemed to have more positive attitudes toward contraception, believing that it was the shared responsibility of both parties. Negative attitudes seemed to be held by traditionally oriented women who feared their partners would suspect them of

loose morals should they take the initiative and suggest use of contraceptives. MacCorquodale's results suggest that gender role orientation may relate to contraceptive use and attitudes, as well as the willingness and ability to discuss them.

In a similar finding, Marsiglio and Menaghan (1987) report that males with androgynous gender role orientations may participate in contraceptive use to a greater extent than traditionally oriented men. Their findings also seem to support the idea that androgynous individuals have more positive attitudes toward contraception.

Effects of the Selected Demographic Variables

A range of demographic variables has regularly been of interest to researchers who study contraception, prophylaxis, and related issues. The demographics selected for inclusion in this study are gender, race, and sexual orientation.

Goodwin and Roscoe (1988), in assessing attitudes and knowledge about AIDS, found considerable differences between men and women on both dimensions. They reported that significantly more women were knowledgeable about the prevalence of AIDS, its modes of transmission, and symptoms commonly associated with the illness. The researchers revealed that not only were men in their

study less knowledgeable, but there were also significantly more men than women in their study who were fearful of AIDS transmission.

Goodwin and Roscoe (1988) also found differences for gender concerning participants' acceptance of gay and lesbian sexual behavior. They reported that more women in their study were accepting of people who are gay and lesbian than were males. This is consistent with the findings reported by Hong (1984) who also found men to be less accepting.

However, there exists some conflicting evidence concerning the exact nature of the effects of gender. For example, Stevenson and Stevenson (1990) found that men and women in their study were indistinguishable concerning their beliefs and perceptions about AIDS and people living with the disease.

Similarly, DiClemente et al. (1987) indicate in their report that the differences they observed between male and female participants on knowledge about AIDS was not substantial enough to be meaningful.

In contrast, Severn (1990) found gender to significantly impact general attitudes about condoms and condom use. She reported that males in her study were more comfortable discussing condom use with potential partners and also were less embarrassed to buy condoms than

female participants. Interestingly, however, she also indicated that males in her study were more likely than females to believe that condoms ruin "the moment" during sex. She found, too, that male participants expressed stronger sentiment that condoms are awkward to use.

Similar findings have been reported concerning the effects of race. For example, in their 1990 attempt to identify demographic characteristics that might help AIDS educators target persons most in need of accurate information about the disease and its related issues, Stevenson and Stevenson determined that race was not a useful factor in distinguishing subgroups of persons who are relatively uninformed. Thus, they concluded that race was a demographic not very helpful to attempts to target persons who should receive more or less intensive AIDS education activities.

DiClemente et al. (1987) report contrasting results. In their study, they found race to be a highly significant predictor of persons' knowledge about AIDS. They tested people who were white, Asian, African-American, and Hispanic and found that whites had significantly higher mean scores on the measure of knowledge than any other group identified in their study. African-Americans, they reported, scored significantly higher than Asians.

With regard to sexual orientation, Temoshok et al. (1987) concluded that gay and bisexual men in their sample were more knowledgeable about the details of AIDS and its related issues than the persons in their study who were heterosexual. Interestingly, knowledge about AIDS was not significantly related to any change in sexual practices but was significantly related to more general health behaviors among gay and bisexual men.

Ross (1988b) conducted a study to identify the components of attitudes toward and beliefs about the condom among gay and bisexual men in order to determine if meaningful differences existed between this group of persons and heterosexual individuals. He used Brown's (1984) Attitude Toward Condoms Scale and discovered through factor analysis some similarities and dissimilarities in the components comprising attitudes. Like heterosexuals, the attitudes of gay and bisexual men, he found, are comprised of a large initial factor concerning overall satisfaction with condoms. However, there are major differences between the groups concerning several subsidiary attitudes. For this reason, he concluded that research in this area must recognize that sexual orientation has an important impact on attitudes toward condoms. Furthermore, he concluded that attitudes were useful in predicting rates of condom use in a

variety of sexual activity.

In summary, research has established that one's attitudes toward contraceptives influence his or her use of them. There are strong (though few direct) indications that these attitudes are influenced by neuroticism, extraversion, authoritarianism, and gender role orientation. Demographic variables such as sexual orientation, race, and gender have also had demonstrated effects. Persons classified as nonanxious and outgoing, as well as those who are androgynous, seem to have more positive attitudes. Typically, men have demonstrated less positive attitudes than women, while race and sexual orientation have been shown to influence knowledge in addition to attitude.

Unfortunately, previous research efforts have tended to not focus on attitudes, opting instead to emphasize use. And, importantly, most have not focused on the impact these variables in conjunction may have on attitudes. It is not possible, therefore, to discern the relative impact of these variables and to determine thusly if any are more or less useful than the others in predicting attitudes toward and use of the condom. Studies have focused either on gender role orientation or on personality styles, but not on the simultaneous effects of both. Moreover, research on attitudes

specifically toward the condom is particularly scarce.

And, importantly, the effects of the identified variables on persons' attitudes toward and use of the condom as a prophylactic is not known. Research has instead concentrated on these factors with regard to the issue of the condom as contraceptive. It is vital, therefore, to assess for any possible differential effects these factors may have on attitudes and use concerning prophylactic utilization.

CHAPTER III

DESIGN AND METHODOLOGY

Participant Selection

Participants in the present study were selected from the undergraduate and graduate student populations at Western Michigan University (WMU) in Kalamazoo, Michigan, and at Middle Tennessee State University (MTSU) in Murfreesboro, Tennessee. Volunteers were also solicited from the Greater Tallahassee, Florida community. Data were collected from a total of 240 persons. The scores of 26 persons were not used in the final analyses due to invalid test results (e.g., improper responses or failing to complete the test battery). The final sample was comprised of 214 persons, each of whom completed all instruments in the battery and was judged to have produced valid results for each instrument.

The 131 females averaged 25.5 years of age, and the 83 males averaged 24.9 years of age. Across all participants ages ranged from 18 to 45 years. Four persons indicated they were of Asian descent, 32 reported they were African-American, 5 said they were of Hispanic

origin, 169 indicated they were white, and 4 persons responded "other" when asked to specify their racial group affiliation.

In accordance with ethical guidelines, individuals were informed that their participation was strictly voluntary and that they were allowed to withdraw from the study at any time. All participants read and signed consent forms which thoroughly outlined details of the study, explained exactly what participation involved, informed them of their rights as participants, and provided them with information about the researcher (e.g., his affiliation with the universities, name, and phone number) (see Appendix A). The researcher adhered to all other ethical guidelines as outlined by the American Psychological Association (1992) and by the appropriate institutional review boards at WMU and MTSU. Copies of the research protocol clearances from both universities are found in Appendices B and C. Also, Appendices D, E, and F contain copies of letters granting appropriate permission to the researcher to employ the selected instruments as measures of the various factors in the present study.

The researcher solicited the participation of volunteers from the WMU community by posting a flyer that described the study and asked interested persons to

arrange with him a time for administration. Eighteen participants were recruited in this manner.

Volunteers at MTSU were solicited from three courses and donated their time as part of their class participation. In each case, regular class time was set aside for group administration. In return for their participation, the students received extra academic credit as part of their enrollment in the courses. A total of 98 participants were obtained in this fashion.

In Tallahassee, Florida, volunteers were solicited through use of a flyer that advertised the study and asked persons to contact the researcher if they desired to take part. The flyer was posted in public areas immediately surrounding the campus of Florida State University. A total of 124 individuals were selected in this manner.

Instruments

Measures of the Independent Variables

Neuroticism and Extraversion

Neuroticism and extraversion were measured using the appropriate scales on the NEO Five-Factor Inventory (NEO-FFI). This is a self-report inventory comprised of 60 Likert-type items. Answers are indicated on a

5-point scale ranging from "strongly agree" to "strongly disagree."

The NEO-FFI assesses what its authors consider to be five major domains of the normal adult personality. These domains are termed Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C). The NEO-FFI is derived from Form S of the Revised NEO Personality Inventory (NEO PI-R) and, as such, constitutes the short form of that instrument. Moreover, the NEO-FFI is, in its own right, a sufficiently comprehensive measure of personality to be useful in almost any research involving personality correlates (Costa & McCrae, 1992, pp. 36-37).

The authors of the NEO-FFI recommend it as a practical alternative to the more lengthy NEO PI-R. And, while the NEO PI-R provides an exacting profile of the domains of personality by measuring the many facets that comprise them, the NEO-FFI is itself quite comprehensive; this shorter version provides useful and accurate global measures of the five major domains. Thus, the NEO-FFI is the more appropriate instrument when testing resources are limited and when global measurements of the domains will suffice (Costa & McCrae, 1992).

Items for the NEO-FFI were derived from those of the original NEO Personality Inventory (NEO-PI)

published in 1985 (Costa & McCrae, 1985b); with the 1992 revision of that instrument came new norms for the NEO-FFI as well. NEO-PI items selected for inclusion in the NEO-FFI were those that had the highest positive or negative loading on their respective factors. After careful examination and item analyses, the final form of the NEO-FFI contained 12 NEO-PI items for each of its five scales. There is no item overlap across the scales (Costa & McCrae, 1992).

Internal consistencies for the NEO-FFI are good. Coefficient alphas were computed for each scale and were within acceptable limits. The coefficient alpha calculated for N was .86; for E, .77; for O, .73; for A, .68; and for C, .81. These coefficients, though smaller than those calculated for the corresponding scales on the NEO PI-R, are satisfactory (Costa & McCrae, 1992).

Moreover, the test-retest reliability of the NEO-FFI is very good. This is evidenced by the following coefficients, each of which is statistically significant: for N and E, .79; for O, .80; for A, .75; and for C, .83. These are 3-month retest reliabilities for the scales and are based on a sample of 208 college students (Costa & McCrae, 1992).

The longer-term stability of the scales is also quite good. In a longitudinal study that spanned 6

years, Costa and McCrae (1988) determined that stability coefficients for the N, E, and O scales ranged from .68 to .83; the test-retest coefficients for scales A and C were calculated as .63 and .79, respectively.

Further, Costa and McCrae (1992) reported the results of a second longitudinal study they conducted, this one spanning 7 years. In it, they demonstrated stability coefficients ranging from .63 to .81 for all five of the factors.

In their development, each of the NEO-FFI scales was correlated with the corresponding scale on the NEO PI-R. These coefficients were as follows: for N, .92; for E, .90; for O, .91; for A, .77; and for C, .87. All of these coefficients are statistically significant (Costa & McCrae, 1992).

Because the NEO-FFI scales are shortened versions of NEO PI-R scales, a reduction in validity and precision is incurred between the instruments. The loss in validity is, however, acceptable. On average, the NEO-FFI scales account for about 85% as much variance in criteria of convergent validity as do the NEO PI-R factor scales (Costa & McCrae, 1992).

These data support the authors' assertion that the NEO-FFI is an acceptable alternative to the NEO PI-R. The NEO-FFI provides information on the major domains of

personality that is functionally equivalent to that provided by the NEO PI-R. An accurate and meaningful measurement of personality is obtained and the minor loss in precision is tolerable.

Of the five scales, only the NEO-FFI N and E scales were of direct interest in the present study. Consequently, these were the only scales that were scored and no a priori hypotheses were advanced concerning possible relationships the other scales may have to the dependent variables. However, because all five scales were administered, it will be possible to score them at a later date and then investigate the effects of the other personality traits.

The N scale is described by Costa and McCrea (1992) as a measure of what they consider the most pervasive domain of normal adult personality. This scale contrasts persons who are well adjusted and emotionally stable with those who are poorly adjusted and neurotic. The authors describe individuals scoring high on N as prone to general anxiety, guilt, and embarrassment; anger and disgust are also common among high scorers. Moreover, persons scoring high on this scale are prone to have irrational ideas, are less able to control their impulses, and cope more poorly with stress than do those who score low. In contrast, persons low on this scale

are described as stable, even-tempered, and relaxed; they are able to face stressful situations without becoming as upset or anxious as higher scorers might (Costa & McCrae, 1992, p. 14)

Individuals scoring high on the E scale are described as assertive, active, and talkative. They are sociable and they usually like most people. Extraverts are typically energetic and optimistic, they enjoy stimulation and excitement, and they tend to have a cheerful disposition. Low scorers on this scale are said to be introverted and are described as experiencing the absence of these characteristics--not necessarily their opposites. Thus, introverts are described as reserved rather than unfriendly. Instead of being sluggish, they are more evenly paced and have a naturally slower personal tempo. They prefer to be alone, appreciate solitude, and value their independence from others. And, while they are not given to the exuberance of many extraverts, introverts are not unhappy or pessimistic (Costa & McCrae, 1992, p. 15).

Importantly, scores to either extreme of these scales are not considered indicative of psychopathology. Instead, the authors contend, all scales measure dimensions of normal personality functioning (Costa & McCrae, 1992, pp. 14-16).

There is ample evidence of external validity for the NEO-FFI. Consistencies in scores were found in several studies that compared its scales with other instruments purported to measure the same constructs. For example, the N and E scales correlate very strongly with the N and E scales of the Eysenck Personality Inventory (Costa & McCrae, 1992).

Further, according to Costa and McCrae (1989), scale O is highly correlated with many of the scales on the Personality Research Form (PRF) that are taken to measure the same personality characteristics. Indeed, all five domain scales have been found to tap a similar range of personality variables as those tapped by the PRF (Costa & McCrae, 1989, p. 9). Moreover, the NEO-PI was found to be correlated with the Minnesota Multiphasic Personality Inventory (Costa, Busch, Zonderman, & McCrae, 1986) and with the Revised Interpersonal Adjective Scales (Costa & McCrae, 1985a, p. 10). Significant intercorrelations also exist with the Myers-Briggs Type Indicator, the California Personality Inventory, the State-Trait Personality Inventory, the Profile of Mood States, and the Adjective Checklist (Costa & McCrae, 1992).

Authoritarianism

This factor was measured using Byrne and Kelly's (1981) 22-item authoritarianism scale. This scale has a reported coefficient alpha of .73 and, importantly, is considered an improvement over the original authoritarianism scale constructed by Adorno et al. in 1950 (Cunningham et al., 1991). It is also shorter, less time consuming, and is more contemporary.

Byrne and Kelly's scale has been used in a number of research efforts over the years. For example, Rykman, Burns, and Robbins employed the scale in 1986 and found scores on it to successfully predict persons' sentencing recommendations in simulated trials. Byrne and Przybyla (1980) also used this scale to accurately predict political preferences. Also, Cunningham et al. (1991) found that authoritarianism, as indicated by scores on the scale, accounted for a significant proportion of variance in negative attitudes toward persons living with AIDS.

Gender Role Orientation

This variable was measured using the short form of the Bem Sex Role Inventory (BSRI). The short BSRI, like the original, provides measures of masculinity,

femininity, and androgyny. The scales of this form have been found to be highly correlated (around .90) with the corresponding scales on the original (Lippa, 1985). The short form (comprised of the first 30 items of the original) was used because it is psychometrically superior to the original; the short BSRI has greater internal consistency than the original and seems to provide measures of masculinity, femininity, and androgyny that are more pure factorially (Lippa, 1985; Payne, 1985).

The BSRI displays good internal consistency and reliability. The coefficient alphas for females are .84 on the Femininity scale and .86 on the Masculinity scale. Coefficient alphas for males are .87 on the femininity scale and .85 on the Masculinity scale (Bem, 1981).

Measures of the Dependent Variables

Attitudes Toward the Condom as a Contraceptive

Persons' attitudes toward the condom as contraceptive were assessed using the Attitude Toward Condoms Scale (ATCS) developed by Brown (1984). This instrument consists of 40 Likert-type items, with a 5-point rating scale ranging from "strongly agree" to "strongly disagree." Examinees indicate their level of agreement

with statements indicating both positive and negative aspects of condoms and condom use. Scores can range from 40 (most negative attitude) to 200 (most positive attitude). Factor analysis indicates the scale assesses five factors comprising attitudes toward the condom. These factors are (1) satisfaction with the safety and reliability of the condom, (2) comfort, (3) embarrassment, (4) sexual arousal/excitement, and (5) interruption of sexual activity.

Brown administered the completed form of the ATCS to male and female undergraduates enrolled in a variety of college courses. The mean age of students in the normative sample was 20.7 years for males and 19.8 years for females.

Evidence indicates the ATCS is psychometrically sound. Cronbach's alpha was found to be .93 for both sexes on the scale (Brown, 1984). Moreover, demonstration of construct validity can be found in a study by Tanner and Pollack (1988). Participants in their study were found to score significantly higher on the ATCS after receiving condoms with instructions on how to eroticize their use in sexual encounters. In a similar study, Brown (1983) found that after reading stories in which the characters used condoms during sexual activity, participants showed significantly more positive

attitudes toward the condom (reflected by increased scores) than those who read stories in which no condom was used. Furthermore, the scale has been found to be equally valid and reliable for both genders.

Attitudes Toward the Condom as a Prophylactic

Attitudes toward the condom as an AIDS-relevant device were assessed using the Condom Attitude Scale (CAS) developed by Sacco et al. (1991). The CAS is comprised of 57 items designed to measure persons' attitudes toward and use of the condom with respect to the prevention of AIDS. Responses to items are indicated on a 7-point Likert scale ranging from "strongly agree" to "strongly disagree." Higher scores reflect more favorable attitudes toward the condom as prophylactic than do lower scores.

Factor analysis indicates the CAS measures nine factors comprising attitudes. These factors are as follows: (1) Effect on Sexual Experience, (2) Global Attitude, (3) Interpersonal Impact, (4) Promiscuity, (5) Self-control, (6) Perceived Risk, (7) Inhibition, (8) Relationship Safety, and (9) Total CAS Score. The authors indicate that the total CAS score is most useful when a single measure of overall attitude is of interest. In the present study, therefore, the relative

effects of the independent variables on the total CAS score is of interest. In development of the CAS, Sacco et al. (1991) administered the scale to 776 undergraduate university students. Their average age was reported to be about 20 years.

The CAS is a psychometrically sound instrument. In their report, Sacco et al. (1991) stated that out of the 147 initial candidate items, all but the final 57 were eliminated. Criteria for elimination of an item, they reported, were (a) the item loaded less than .40 on any factor, (b) it loaded more than .30 on any second factor, and (c) the item's meaning was inconsistent with its factor or was redundant with another item on the same factor. Further, all reported coefficient alphas (for internal consistency reliability) are quite high for all subscales, ranging from .73 to .92. Test-retest correlations for the subscales are also very good, ranging from a low of .52 to a high of .86. Only one factor (Global Attitude--at .52) evidenced a correlation coefficient lower than .73. Lastly, the authors report that the total CAS, along with the majority of its subscales, explain a large amount of variance in examinees' condom use.

Condom Use

Condom use was measured using the Condom Use Questionnaire (CUQ) Forms I and P. This instrument, developed in conjunction with the CAS by Sacco et al. (1991), is a 25-item questionnaire. Form I (CUQ-I) contains 13 items and measures the examinee's intention to use a condom in the future. Form P (CUQ-P) is comprised of 12 items and assesses the examinee's past condom use.

The CUQ-I presents a number of scenarios involving a variety of sexual activities with a range of partners and asks the examinee to indicate the frequency with which he or she would use a condom. The CUQ-P also provides a number of scenarios that involve a broad range of activities and partners; this form asks the examinee to indicate the extent to which a condom was used if he or she had actually engaged in the sexual activity presented in the scenario.

On both forms, a 6-point Likert scale is used to indicate frequency of use. The CUQ-I presents the examinee with response options ranging from "strongly disagree" to "strongly agree." On the CUQ-P, the examinee chooses from response options that range from "0% of the time" to "100% of the time." On both forms, a seventh option is provided by which the examinee may indicate

that he or she would not or did not have sex in the situation presented in a given scenario.

In their 1991 report, Sacco et al. confirm the existence of many strong intercorrelations between CAS subscales and both the CUQ-I and CUQ-P. The majority of these correlations are significant at either the .01 or .001 levels.

Procedure

Data collection began 13 March 1995, following formal approval by the Human Subjects Institutional Review Boards at WMU and MTSU; collection efforts were concluded 16 December 1995. On the WMU campus, individual and group administrations were conducted in vacant classrooms in Sangren Hall; at MTSU group administrations occurred in classrooms located on that campus; group administrations occurred also in the researcher's home in Tallahassee, Florida.

All persons completed all the instruments in the test battery within 30 to 60 min and in one sitting. The only verbal instructions given were that the participants read and follow closely the printed directions for each instrument. No further verbal aid was given, except to clarify directions as needed. Before completing any instrument, each person read, had explained to

them, and then signed a detailed informed consent sheet.

Statistical Analyses

The data were analyzed through use of Multivariate Multiple Regression (MMR), Multivariate Analysis of Variance (MANOVA), and Analysis of Variance (ANOVA). Also, when appropriate, a univariate multiple regression was performed for specific dependent variables.

CHAPTER IV

RESULTS

Participants were first divided into the various categories of gender role orientation. Classification was accomplished using the median-split method proposed by Spence, Helmreich, and Stapp (1975). This method was endorsed by Bem (1981) as the best classification scheme for examiners to use when conducting research with the BSRI. Using this method, men and women scoring above the median of the Feminine scale and below the median of the Masculine scale were identified as having a traditionally feminine gender role orientation. Likewise, men and women scoring above the median of the Masculine scale and below the median of the Feminine scale were identified as having a traditionally masculine gender role orientation. Those scoring above the medians of both scales were classified as androgynous, while those scoring below the medians of both scales were classified as undifferentiated. This classification scheme made possible the comparison of "gender-typed" persons (defined as having either a masculine or feminine gender role orientation) with "nongender-typed" persons

(defined as either androgynous or undifferentiated).

Three demographic variables--race, gender, and sexual orientation--were included for analysis in the present study. In addition to specifying their gender, participants indicated whether they were African-American, Asian, Hispanic, white, or "other"; they also indicated whether they were bisexual, gay, lesbian, or heterosexual. These variables were employed in analyses to determine if there were significant difference in attitudes toward and use of the condom across their respective categories.

With regard to the other independent variables, participants' scores on the NEO-FFI Neuroticism and Extraversion scales were recorded as T-scores and were analyzed as continuous variables. Scores on the Authoritarianism Scale were recorded as raw scores and were also analyzed in continuous form. Each of the measures of the dependent variables were recorded as raw scores and were entered into the analyses in their continuous forms.

Results of the Statistical Analyses for Each Hypothesis

Hypothesis 1

There will be significant differences between

gender-typed and nongender-typed individuals for the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use.

The means and standard deviations of each variable for gender-typed and nongender-typed individuals are shown in Table 1. As can be seen, nongender-typed individuals generally scored higher on the measures of each dependent variable than did those who were gender-typed. Their higher scores indicate that the nongender-typed participants held more positive attitudes toward the condom as contraceptive than did those who were gender-typed. These scores also demonstrate more positive attitudes toward the condom as prophylactic as well as a greater frequency of condom use among the nongender-typed persons.

A Multivariate Analysis of Variance (MANOVA) was performed in order to control alpha at .05 when testing all of the dependent variables. The MANOVA procedure also was selected because it afforded the added advantage of accommodating any colinearity among variables. The MANOVA demonstrated a significant difference between the gender-typed and nongender-typed groups on the linear combination of attitudes toward the condom as a contraceptive, attitudes toward the condom as a

Table 1
Means and Standard Deviations for Each Variable
by Gender Role Orientation

Independent Variables				Dependent Variables		
GRO	NEURO	EXTRA	AUTHO	CONTR	PROPH	USE
Gender-Typed ($n = 123$)						
<u>M</u>	58.15	49.67	96.27	137.76	227.93	125.81
<u>SD</u>	13.00	12.49	21.23	28.13	55.87	45.47
Nongender-Typed ($n = 91$)						
<u>M</u>	50.18	56.22	87.37	151.44	260.76	148.00
<u>SD</u>	13.54	13.11	16.67	28.43	48.17	33.89

Note. GRO = Gender role orientation; NEURO = Neuroticism; EXTRA = Extraversion; AUTHO = Authoritarianism; CONTR = Contraceptive attitudes; PROPH = Prophylactic attitudes; USE = Reported use.

prophylactic, and actual condom use, $F(3, 202) = 7.80$, $p = .0001$ (Wilk's Lambda = .896).

Subsequent Univariate Analyses of Variance (ANOVAs) tested the effects of gender role orientation on each of the three dependent variables. The tests revealed significant differences for gender role orientation on attitudes toward the condom as contraceptive, $F(1, 204)$

= 12.36, $p = .0005$; attitudes toward the condom as prophylactic, $F(1, 204) = 20.54$, $p = .0001$; and actual condom use, $F(1, 204) = 16.58$, $p = .0001$. These results confirmed that there are meaningful differences in scores between nongender-typed and gender-typed persons on each of the dependent variables. Moreover, these analyses confirm the expectations that nongender-typed individuals would demonstrate significantly more positive attitudes toward the condom as contraceptive and as prophylactic and would also evidence a significantly greater frequency of condom use.

Hypothesis 2

There will be significant gender differences for the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use.

A MANOVA test was conducted to determine if gender had a significant effect on the linear combination of the dependent variables. The result of this test is not statistically significant: $F(3, 202) = 2.55$, $p = .0567$ (Wilk's Lambda = .963). It was therefore concluded that gender has no meaningful effect on attitudes and use.

Hypothesis 3

There will be significant race differences for the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use.

Another MANOVA test was conducted to determine if race had a significant effect on the linear combination of the dependent variables. As was the case with gender, the result of this test is not statistically significant: $F(12, 535) = .76$, $p = .6908$ (Wilk's Lambda = .956). Based on this result it was concluded that race does not have a meaningful impact on either type of attitude, nor does it impact use.

Hypothesis 4

There will be significant sexual orientation differences for the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use.

As with gender and race, a MANOVA test was conducted to determine if sexual orientation had a significant effect on the linear combination of the dependent variables. The result of this test is, like the others, not statistically significant: $F(9, 492) = .816$, $p =$

.6014 (Wilk's Lambda = .965). This finding resulted in the conclusion that sexual orientation does not have a meaningful effect upon attitudes and use.

Tables 2 and 3 illustrate how the gender groups were categorized according to race and sexual orientation. These tables present the means and standard deviations obtained by females and males respectively on all the continuous measures of the independent and dependent variables. The number of subjects in each condition is also indicated in the tables. As noted, none of the MANOVA tests found significant differences on the dependent variables among the participants when they were categorized according to gender, race, and sexual orientation. Thus, the observed disparity in means and standard deviations across these variables is not statistically meaningful and the hypotheses that they would significantly influence attitudes and use were not upheld.

Hypothesis 5

The linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation will be a significant predictor of attitudes toward the condom as contraceptive.

Before testing this and the following hypotheses, a

Table 2
Means and Standard Deviations of All
Variables for Female Participants

Independent Variables						Dependent Variables								
RACE	SEXOR	NEURO		EXTRA		AUTHO		CONTR		PROPH		USE		
		<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>n</u>
African-American	BIS	--	--	--	--	--	--	--	--	--	--	--	--	0
	HET	55.3	13.2	53.6	14.1	93.9	12.4	144.5	33.2	242.6	72.4	127.2	47.9	21
	LES	--	--	--	--	--	--	--	--	--	--	--	--	0
Asian	BIS	--	--	--	--	--	--	--	--	--	--	--	--	0
	HET	48.0	9.9	55.0	18.4	86.5	17.7	158.5	12.0	240.5	37.5	140.0	36.8	2
	LES	--	--	--	--	--	--	--	--	--	--	--	--	0
Hispanic	BIS	--	--	--	--	--	--	--	--	--	--	--	--	0
	HET	44.7	2.1	53.0	4.4	99.7	25.6	124.3	16.8	221.7	45.5	130.0	42.6	3
	LES	--	--	--	--	--	--	--	--	--	--	--	--	0
White	BIS	74.0	--	45.0	--	100.0	--	104.0	--	116.0	--	72.0	--	1
	HET	55.3	14.5	51.8	13.0	92.6	19.8	148.8	29.3	249.9	51.4	144.2	38.8	100
	LES	45.7	5.7	55.0	12.1	86.7	8.5	140.3	17.6	226.0	65.8	112.0	97.2	3
Other	BIS	--	--	--	--	--	--	--	--	--	--	--	--	0
	HET	73.0	--	32.0	--	79.0	--	141.0	--	284.0	--	159.0	--	1
	LES	--	--	--	--	--	--	--	--	--	--	--	--	0

Note. SEXOR = Sexual orientation; NEURO = Neuroticism; EXTRA = Extraversion; AUTHO = Authoritarianism; CONTR = Contraceptive attitudes; PROPH = Prophylactic attitudes; USE = Reported use; BIS = Bisexual; HET = Heterosexual; LES = Lesbian.

Table 3
Means and Standard Deviations of All
Variables for Male Participants

		Independent Variables						Dependent Variables						
RACE	SEXOR	NEURO		EXTRA		AUTHO		CONTR		PROPH		USE		n
		<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
African-American	BIS	--	--	--	--	--	--	--	--	--	--	--	--	0
	HET	53.4	13.3	51.1	14.8	90.7	17.4	141.6	22.5	235.4	67.1	130.7	43.4	9
	GAY	49.5	20.5	53.5	14.8	92.5	44.5	137.5	29.0	235.5	53.0	132.5	53.0	2
Asian	BIS	--	--	--	--	--	--	--	--	--	--	--	--	0
	HET	50.0	12.7	55.5	0.7	96.0	22.6	125.5	40.3	227.5	116.7	170.0	7.1	2
	GAY	--	--	--	--	--	--	--	--	--	--	--	--	0
Hispanic	BIS	--	--	--	--	--	--	--	--	--	--	--	--	0
	HET	75.0	15.6	62.5	10.6	90.0	14.1	134.0	5.7	238.5	2.1	114.0	4.2	2
	GAY	--	--	--	--	--	--	--	--	--	--	--	--	0
White	BIS	65.0	--	44.0	--	64.0	--	155.0	--	240.0	--	132.0	--	1
	HET	54.5	13.2	53.2	13.8	94.0	22.3	137.2	28.9	233.1	52.7	127.2	40.1	59
	GAY	46.0	11.9	55.6	14.3	82.4	28.6	156.8	26.3	266.2	43.3	140.6	48.1	5
Other	BIS	--	--	--	--	--	--	--	--	--	--	--	--	0
	HET	57.7	8.7	50.0	13.5	85.3	22.2	118.3	18.5	203.7	52.7	87.3	77.5	3
	GAY	--	--	--	--	--	--	--	--	--	--	--	--	0

Note. SEXOR = Sexual orientation; NEURO = Neuroticism; EXTRA = Extraversion; AUTHO = Authoritarianism; CONTR = Contraceptive attitudes; PROPH = Prophylactic attitudes; USE = Reported use; BIS = Bisexual; HET = Heterosexual; GAY = Gay.

Multivariate Multiple Regression (MMR) was performed as the test of significance for the relationships between the independent and dependent variables. The MMR also controlled alpha across these multiple comparisons and accommodated any collinearity among variables. The MMR established that the linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation is a significant predictor of the linear combination of attitudes toward the condom as a contraceptive, attitudes toward the condom as a prophylactic, and actual condom use, $F(12, 548) = 7.05, p = .0001$ (Wilk's Lambda = .684).

Univariate Multiple Regression was, therefore, utilized to build the regression line for each dependent variable. In construction of each model, gender role orientation was entered into the equation coded as follows: Undifferentiated = 0, Androgynous = 1, Feminine = 3, and Masculine = 4.

For the prediction of attitude toward the condom as a contraceptive based on the linear combination of these independent variables, the following regression model was constructed: $CONTRA^{\wedge} = 200 - .27 NEURO + .29 EXTRA - .58 AUTHO - 2.26 GRO$. Where CONTRA = attitudes toward the condom as a contraceptive, NEURO = neuroticism, EXTRA = extraversion, AUTHO = authoritarianism, and

GRO = gender role orientation. The obtained regression line is statistically significant, $F(4, 209) = 18.05$, $p = .0001$ and accounts for 26% of the variance in CONTRA ($R^2 = .2568$). That is, the combination of neuroticism, extraversion, authoritarianism, and gender role orientation explains 26% of the variance in attitudes toward the condom as a contraceptive. This model establishes that, across participants, as levels of neuroticism and authoritarianism decrease, attitudes toward the condom as contraceptive become more positive. The model also demonstrates that as level of extraversion increases, there are correspondingly more positive attitudes. Evidenced also by the model is that attitudes toward the condom as contraceptive are more positive among non-gender-typed persons than among those who are gender-typed.

This analysis confirms the expectation that the linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation would be a significant predictor of attitude toward the condom as contraceptive. Moreover, the relationships of the independent variables to this attitude are in the expected directions.

Hypothesis 6

The linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation will be a significant predictor of attitudes toward the condom as prophylactic.

For the prediction of attitude toward the condom as a prophylactic based on the linear combination of these independent variables, the following regression model was constructed: $PROPH^{\wedge} = 357 - .53 NEURO + .39 EXTRA - 1 AUTHO - 8.26 GRO$, where $PROPH$ = attitudes toward the condom as a prophylactic. This regression line is statistically significant, $F(4, 209) = 17.22$, $p = .0001$ and accounts for 25% of the variance in $PROPH$ ($R^2 = .2478$). Thus, one fourth of the variance in attitudes toward the condom as a contraceptive is explained by the combination of the independent variables. Moreover, the relationships of the independent variables to attitudes toward the condom as prophylactic are in the expected directions. That is, more positive attitudes were recorded among those who were nongender-typed, had lower levels of neuroticism and authoritarianism, and higher levels of extraversion.

Hypothesis 7

The linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation will be a significant predictor of actual condom use.

For the prediction of actual condom use based on the linear combination of these independent variables, the following regression model was constructed:

$$USE^{\wedge} = 203 - .31 \text{ NEURO} + .32 \text{ EXTRA} - .60 \text{ AUTHO} - 7.28 \text{ GRO},$$

where USE = condom use. This regression line is statistically significant, $F(4, 209) = 11.81$, $p = .0001$ and accounts for 18% of the variance in USE ($R^2 = .1843$). This allows for the conclusion that a significant proportion of the variance in condom use is explained by the combination of neuroticism, extraversion, authoritarianism, and gender role orientation. Moreover, the relationships of these independent variables to condom use are in the expected directions. That is, more use was reported by those who were nongender-typed, had lower levels of neuroticism and authoritarianism, and higher levels of extraversion.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

Previous Research and Reasons for the Present Study

There can be little doubt that the problems of unplanned pregnancy and the transmission of AIDS and other STDs can be better addressed through higher rates of condom use. This study was conducted, therefore, to enable professionals to more effectively promote condom utilization as both contraceptive and prophylactic. Specifically, the present study was meant to improve professionals' understanding of several factors that seem crucial to the influence of condom use across these two closely allied situations.

If condom use is to be promoted, an especially effective point at which to intervene is at the level of attitudes toward the device. In the review of the literature, previous research was described whereby it was established that attitude is an important factor mediating condom use. It was documented that a person's intention to use or to not use condoms is dictated in

large part by his or her attitudes toward them.

Therefore, in addition to assessing the impact of the selected factors on condom use, the present study was also designed to determine how they impact attitudes toward the condom. This is because, even though attitudes toward the condom have been demonstrated to be an important precursor to condom use and to influence utilization of the device across a variety of situations, previous research has not scrutinized the impact of the selected factors of this study on such attitudes. Moreover, the present study was meant to provide a unique contribution to the literature by more thoroughly describing and contrasting the influence of the selected factors upon condom use and upon attitudes toward the condom in contraceptive versus prophylactic situations.

It was revealed in the literature review that previous research has identified a number of variables that are worthy of close examination when considering attitudes toward the condom and condom use. Some particularly important variables that were identified include neuroticism, extraversion, authoritarianism, and gender role orientation.

Importantly, the review of studies unearthed only a relatively few that had investigated these factors' impact on attitudes toward and use of the condom as a

prophylactic. The majority of the studies had instead focused on the roles of these variables with respect to attitudes toward and use of the condom as a contraceptive.

The review of the literature further revealed that no prior studies had investigated the possible differential effects of these variables by directly and explicitly comparing their simultaneous impact upon attitudes toward and use of the condom as contraceptive versus prophylactic. Instead, most studies that were described had considered either contraception or prophylaxis alone, thereby making it more difficult to discern the relative usefulness of an identified factor depending on the reasons for condom use. In this way, the literature, though it contained information that was suggestive, did not allow for a thorough description of the relative or potential roles the selected factors might play in both contraception and prophylaxis.

Indeed, the review of the literature revealed that research into the influence of neuroticism and extraversion over condom attitudes and use was limited almost entirely to contraceptive situations. The review also established that prior research with authoritarianism had generally focused on this factor's impact upon attitudes toward persons living with AIDS or toward the

disease itself, thereby making it unclear how useful the factor might be in predicting attitudes specifically toward the condom as an AIDS-relevant prophylactic and as a contraceptive. Similarly, the literature review evidenced that, as with neuroticism and extraversion, studies using gender role orientation focused almost exclusively on how this factor impacts contraceptive situations. Though suggestive, prior research left unanswered the question as to if these variables might help explain attitudes toward and use of the condom in AIDS-relevant prophylactic situations.

Importantly, the focus in the literature on attitudes toward and use of the condom as contraceptive has done much to marginalize the concerns of those who might elect to use the condom not for its contraceptive properties but for its ability to prevent the spread of infection (e.g., those engaged in same-gender sexual activity). In this way, the literature has emphasized the concerns of the heterosexual community and has left professionals at a disadvantage when trying to understand and explain issues that are relevant to prophylaxis. The present study was meant to improve upon these weaknesses in the literature by exploring the potential usefulness of neuroticism, extraversion, authoritarianism, and gender role orientation (all

factors previously shown to be relevant to a number of issues closely allied to condom-related attitudes and use) in predicting attitudes toward and use of the condom as a contraceptive versus prophylactic. The present study also made use of information about selected demographic variables collected from the participants (viz., race, gender, and sexual orientation). Each demographic variable was entered into the equations to determine its impact on the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use.

Methodology

Participants in the present study were selected from the undergraduate and graduate student populations at Western Michigan University (WMU) in Kalamazoo, Michigan, and at Middle Tennessee State University (MTSU) in Murfreesboro, Tennessee. Volunteers were also solicited from the Greater Tallahassee, Florida community.

In the final sample of 214 persons there were 131 females who averaged 25.5 years of age. The 83 males averaged 24.9 years of age. Across all participants, ages ranged from 18 to 45 years. Four persons indicated they were of Asian descent, 32 reported they were

African-American, 5 said they were of Hispanic origin, 169 indicated they were white, and 4 persons responded "other" when asked to specify their racial group affiliation.

In accordance with ethical guidelines, individuals were informed that their participation was strictly voluntary and that they were allowed to withdraw from the study at any time. All participants read and signed consent forms and the researcher adhered to all ethical guidelines as outlined by the American Psychological Association and by the appropriate institutional review boards at WMU and MTSU.

To measure the independent variables, all participants in the final sample completed the NEO-Five Factor Inventory as the index of neuroticism and extraversion. They also completed the Authoritarianism Scale and the Bem Sex Role Inventory. To obtain measures of the dependent variables, all participants completed the Attitude Toward Condom Scale which provided the index of attitudes toward the condom as contraceptive, the Condom Attitude Scale which served as the measure of attitudes toward the condom as prophylactic, and the Condom Use Questionnaire (Forms I and P) which provided the index of condom use.

Statistical Analyses Employed

The data were analyzed through use of Multivariate Multiple Regression (MMR), Multivariate Analysis of Variance (MANOVA), and Analysis of Variance (ANOVA). Also, when appropriate, univariate multiple regression was performed for specific dependent variables.

Findings for Each Hypothesis

Hypothesis 1

There will be significant differences between gender-typed and nongender-typed individuals for the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use.

Nongender-typed participants held significantly more positive attitudes toward the condom as contraceptive than did those who were gender-typed. Their scores also demonstrated significantly more positive attitudes toward the condom as prophylactic, as well as a significantly greater frequency of condom use, when they were compared to persons classified as gender-typed.

A Multivariate Analysis of Variance (MANOVA) demonstrated a statistically significant difference between the gender-typed and nongender-typed participants on the

linear combination of attitudes toward the condom as a contraceptive, attitudes toward the condom as a prophylactic, and actual condom use.

Subsequent Univariate Analyses of Variance (ANOVAs) tested the effects of gender role orientation on each of the three dependent variables separately. The tests revealed significant differences for gender role orientation on attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use. These results confirmed that there are meaningful differences in scores between nongender-typed and gender-typed persons on each of the dependent variables.

These analyses confirm the expectation that nongender-typed individuals would demonstrate significantly more positive attitudes toward the condom as contraceptive and as prophylactic, and would also evidence a significantly greater frequency of condom use.

Hypothesis 2

There will be significant gender differences for the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use.

A MANOVA test was conducted to determine if gender

had a significant effect on the linear combination of the dependent variables. The result of this test is not statistically significant. It was therefore concluded that gender has no meaningful effect on attitudes and use.

Hypothesis 3

There will be significant race differences for the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use.

Another MANOVA test was conducted to determine if race had a significant effect on the linear combination of the dependent variables. As was the case with gender, the result of this test is not statistically significant. Based on this result it was concluded that race does not have a meaningful impact on attitudes and use.

Hypothesis 4

There will be significant sexual orientation differences for the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use.

As with gender and race, a MANOVA test was conducted to determine if sexual orientation had a significant

effect on the linear combination of the dependent variables. The result of this test is not statistically significant, which necessitated the conclusion that sexual orientation did not have a meaningful effect upon attitudes and use among participants in the present study.

Before testing Hypotheses 5 through 6, a Multivariate Multiple Regression (MMR) was conducted which established that the linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation is a significant predictor of the linear combination of attitudes toward the condom as a contraceptive, attitudes toward the condom as a prophylactic, and actual condom use. A univariate Multiple Regression was, therefore, utilized for each dependent variable.

Hypothesis 5

The linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation will be a significant predictor of attitudes toward the condom as contraceptive.

It was determined that the linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation explains a statistically significant proportion of variance in attitudes toward the condom as

a contraceptive. The constructed regression model established that, across participants, as levels of neuroticism and authoritarianism decrease, attitudes toward the condom as contraceptive became more positive. The model also demonstrated that as level of extraversion increased, there were correspondingly more positive attitudes toward the condom as contraceptive. Evidenced also by the model was that attitudes toward the condom as contraceptive are more positive among nongender-typed persons than among those who are gender-typed.

This analysis confirmed the expectation that the linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation would be a significant predictor of attitude toward the condom as contraceptive. Moreover, the relationships of the independent variables to this attitude were in the expected directions.

Hypothesis 6

The linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation will be a significant predictor of attitudes toward the condom as prophylactic.

It was determined that the linear combination of neuroticism, extraversion, authoritarianism, and gender

role orientation explains a statistically significant proportion of variance in attitudes toward the condom as a prophylactic. As was the case with attitudes toward the condom as contraceptive, the constructed regression model established that, across participants, as levels of neuroticism and authoritarianism decrease, attitudes toward the condom as prophylactic become more positive. The model also demonstrated that as level of extraversion increases, there are correspondingly more positive attitudes toward the condom as prophylactic. Evidenced also by the model was that attitudes toward the condom as prophylactic are significantly more positive among nongender-typed persons than among those who are gender-typed.

This analysis confirmed the expectation that the linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation would be a significant predictor of attitude toward the condom as prophylactic. Moreover, the relationships of the independent variables to this attitude were in the expected directions.

Hypothesis 7

The linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation will

be a significant predictor of actual condom use.

It was also determined that the linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation explains a statistically significant proportion of variance in actual condom use. The constructed regression model established that, across participants, as levels of neuroticism and authoritarianism decrease, rate of use increases. The model also demonstrated that as level of extraversion increases, rate of use increases. Evidenced also by the model was that rate of use is significantly higher among non-gender-typed persons than among those who are gender-typed.

This analysis confirmed the expectation that the linear combination of neuroticism, extraversion, authoritarianism, and gender role orientation would be a significant predictor of condom use. Moreover, the relationships of the independent variables to use were in the expected directions.

Discussion of Results

The results of this study supported most of the hypotheses. In each case, neuroticism, extraversion, authoritarianism, and gender role orientation proved to be significant predictors of attitudes toward the condom

as contraceptive, attitudes toward the condom as prophylactic, and actual condom use. These findings are entirely as expected and are consistent with prior research efforts similar to the present one.

Moreover, the effects of these variables were as expected. That is, higher levels of neuroticism and authoritarianism were indeed predictive of more negative attitudes and less frequent use, while lower levels of these traits were associated with more positive attitudes and a greater frequency of use. Also consistent with expectations, high levels of extraversion and a nontyped gender role orientation coexisted with more positive attitudes and more frequent use, while the gender-typed orientations and introversion coexisted with more negative attitudes toward and less frequent use of the condom. What follows is a description of the effect of each variable and a discussion of possible reasons for the effect.

Impact of Neuroticism

The impact of neuroticism upon attitudes toward and use of the condom is probably best explained as a function of the level of anxiety that characterizes this trait. In the present study, persons scoring high on neuroticism are defined as anxious and under a

persistent state of general psychological distress. This distress is comprised chiefly of a range of negative affect including fear, anger, sadness, embarrassment, guilt, and disgust. A high degree of neuroticism also entails relatively poor adjustment to life situations in general; people who are highly neurotic tend to be less able to control their impulses and to cope effectively with stressors.

There can be little argument that condoms and condom use often evoke considerable emotion and negative reaction. Condoms and their use are typically cast in a negative light and are often treated as taboo in present culture. Indeed, across large segments of society there exist passionate efforts to limit information about and access to condoms and condom-related products. For evidence of this, one need only look to the repeated and widespread efforts such as those to restrict condom advertisements and to prohibit the distribution of condoms to young people. This has resulted primarily in promoting and heightening the negative emotionality with which these issues have become associated.

Without question, anxiety contributes to defensiveness (Fenichel, 1972, p. 133). The generally defensive posture adopted by persons who are highly neurotic leads them to actively avoid sensitive and

anxiety-provoking issues. Moreover, their particularly high levels of other negative emotions, especially the noted fear, embarrassment, and disgust, may predispose neurotic individuals to avert their attention and behavior from topics that tend to elicit such emotional reactions. Since condoms and related topics are shrouded in timidity and solicitude, there can be little wonder that neurotic individuals tend to hold more negative attitudes toward them and to use them less frequently.

Impact of Extraversion

The observed impact of extraversion upon attitudes toward and use of the condom is most likely attributable to the assertiveness, optimism, and sociability that are characteristic of this trait. In the present study, extraverted individuals are understood to be typically energetic and positive in their outlook on life. They have a cheerful disposition and like most people. Moreover, persons who are extraverted enjoy stimulation and they actively seek out excitement and the company of others.

Introversion is defined as the absence, not the opposite, of these traits. As such, introversion implies a preference for solitude, social modesty, and unassertiveness. People who are introverted typically

are independent and prefer to be alone rather than to seek the company of others. It is not that people who are introverted are aloof or pessimistic, nor are they unfriendly; it is rather that they are reserved and usually find being alone more refreshing than being in the company of others.

These characteristics likely impact attitudes toward and use of the condom by influencing the amount of information about the device obtained through daily discourse. Because they typically communicate with others more comfortably and more readily than do people who are introverted, extraverts likely have better access to the exchange of ideas and information and are therefore more likely to be familiar with condoms and the distinct advantages of using them. People who are introverted may not be as exposed as extraverts to the positive influence of such information and may be less familiar with condoms in result. It is this lack of familiarity that likely inhibits the development of more positive attitudes among those who are introverted. Moreover, their relative isolation from others implies that introverted people are not as frequently called upon to intimately experience, confront, and challenge negative attitudes and information; they are thusly afforded less opportunity to cultivate positive

attitudes.

There are other likely reasons for the impact of extraversion upon attitudes toward and use of the condom. Studies concerned with condom use have consistently found that people who communicate well tend to use condoms with greater frequency and regularity than do those who are poorer communicators. The condom requires effective communication skills because partners must express their desire for and negotiate its use before and during the sexual encounter. This can be contrasted with a coitus-independent method (e.g., the pill) wherein partners need not discuss and negotiate its use with each encounter. Effective condom use, therefore, requires at least basic sexual communication skills and the ability to assert use intentions. Extraverts are likely to be more relaxed in the application of such skills and are therefore able to more successfully and comfortably incorporate regular condom use into sexual activity.

Impact of Authoritarianism

The observed impact of authoritarianism upon attitudes toward and use of the condom most likely results from the propensity of individuals high on this trait to have an exaggerated concern for sexual matters.

Moreover, it has been demonstrated in the literature that authoritarian persons are especially conservative and rigid in their thinking and that they are quick to be rejecting of issues they feel to be in violation of traditional social norms. Thus, recreational sex and/or that which occurs between persons of the same gender are issues these individuals approach with marked emotionality. It follows, therefore, that condoms and condom use would be subject to the same consternation.

Furthermore, one traditionally conservative view of sexual activity is that it should occur in the context of marriage. An even more rigid view is that partners should engage in sex primarily to produce offspring. Condom use is expressly for the prevention of pregnancy and/or disease transmission. As such, condoms are typically employed when sexual activity is pursued recreationally and when the partners are less likely to be married or do not wish to procreate. Indeed, in the present study, questionnaire items designed to measure attitudes toward and use of the condom often made reference to explicitly recreational sexual activity. Since all this is inconsistent with the rigidly conservative view, authoritarian persons are much more likely to find aversive the notion of condoms and condom use.

Also, it has been established that authoritarians

are prone to adopt an "us" versus "them" mindset. This mindset creates the perception that certain problems belong to certain groups or segments of the population and are thus not a part of the mainstream. Authoritarians are therefore particularly quick to reject and treat with contempt and fear those issues they see as belonging to an identified outgroup. It has been thoroughly documented that sexually transmitted diseases--especially AIDS--have been cast in such a way that this dualistic mindset is encouraged. The extent to which they see AIDS, other diseases, and recreational sex as associated with some "undesirable" outgroup, authoritarians will harbor negative attitudes toward them and their related issues (including prophylaxis and contraception).

Impact of Gender Role Orientation

The observed impact of gender role orientation upon attitudes toward and use of the condom may result partly from the tendency of gender-typed persons to regard parenthood as more intrinsically rewarding than those who are not gender-typed. Moreover, gender-typed persons' definition of happiness tends to adhere closely to the traditional male and female roles of father and mother. Thus, the different emphases in terms of how they view

relationships--and their roles in them--likely impacts their attitudes toward the condom. That is, they may use the condom less frequently because the device is not a way for them to ensure happiness and is not entirely consistent with their efforts to establish and maintain what are for them the appropriate male/female roles in intimate relationships.

Indeed, one contention in the literature is that, when compared with nongender-typed persons, gender-typed females may not be as concerned with the possibility that their lives could be disrupted by an unplanned pregnancy. Similarly, it has been documented that heterosexual couples who do not have gender-typed orientations will frequently intend to have fewer children than those in which both hold traditional gender roles. It seems that nongender-typed couples find greater rewards in areas of life outside of parenthood. Logically, they would therefore have more positive attitudes toward the condom and use it more frequently because it enables them to exercise more careful restraint over their reproductive potential, thereby ensuring their route to happiness.

The literature also contains suggestion that non-traditionally oriented persons tend to have more positive attitudes toward contraception, believing it to be

the shared responsibility of both parties. More negative attitudes seem to predominate among the traditionally oriented. Feminine persons have evidenced the tendency to fear their partners would suspect them of loose morals should they suggest using a contraceptive; masculine persons tend to assign responsibility for protection to their partner.

Impact of the Demographic Variables

The only hypotheses that were not upheld by the results of the present study concerned the expected effects of gender, race, and sexual orientation upon the linear combination of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use. None of these independent variables proved useful in predicting condom use or either type of attitude.

Interestingly, the results of the statistical analysis utilizing gender was very nearly significant with an obtained p value of .0567. The fact this test approached significance might indicate that gender is potentially a useful variable in the prediction of attitudes toward and use of the condom, even though it was not found to significantly impact attitudes and use in the present study. This is especially so given that

many studies have found gender to be a useful variable in predicting a range of issues related to and including condoms and their use.

Neither did the present results establish that race and sexual orientation had an important impact on attitudes and use. One possible explanation for this is that perhaps there were inadequate numbers of people representing the ranges of these variables. Of the 214 persons in the final sample, only 2 reported being bisexual, 7 indicated they were gay, and 3 reported being lesbian; the remainder said they were heterosexual. With more adequate representation there might have been established a significant impact for sexual orientation. The same is true of race. Only 4 participants were Asian, just 5 were Hispanic, and only 4 responded "other" when asked to indicate group affiliation. The rest of the sample was comprised of 32 people who were African-American and 169 who were white.

Conclusions

The present study demonstrated that neuroticism, extraversion, authoritarianism, and gender role orientation do each have a significant impact on attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use. It was

demonstrated that more positive attitudes and higher rates of use exist the extent to which individuals score low on neuroticism and authoritarianism, are extraverted, and have a nontraditional gender role orientation. The present study did not establish that gender, race, or sexual orientation are useful predictors of attitudes and use.

It is considered important that neuroticism, extraversion, authoritarianism, and gender role orientation were established as having a significant impact on both use of and attitudes toward the condom as contraceptive and as prophylactic. This study established that each of these variables is indeed useful to professionals who wish to influence contraception and/or prophylaxis. It is safe to conclude from present results that these are factors worthy of careful consideration when working to influence persons' acceptance and use of the condom as contraceptive and prophylactic.

Thus, the present study, which was meant to aid professionals who are working to improve condom use and acceptance, was successful. A number of important factors were identified and their impact on matters crucial to condom acceptance and use was demonstrated. In this way, the present study extends prior research by more thoroughly describing the realms of condom use and of

attitudes toward the device as prophylactic and contraceptive.

The results of this study indicate that professionals can promote a better incorporation of the condom into sexual activity by implementing interventions designed to influence neuroticism, extraversion, authoritarianism, and gender role orientation. The following recommendations are based on the present results and are meant to help in the ongoing attempts to stem the spread of sexually transmitted diseases and to curb unplanned pregnancy.

Essentially, the following recommendations are offered as ways that the findings of this study might be incorporated into larger programs, the primary focus of which would be to promote condom acceptance and use. For example, the discussion that follows will suggest that anxiety reduction and social skill enhancement should be considered by the professional. The discussion is not intended to suggest that programs designed primarily to reduce anxiety or to enhance communication skill be implemented with the intention of promoting condom acceptance and use; the effects of these variables is too indirect for that to succeed. Instead, the discussion is meant to suggest that these issues should be incorporated at some level ancillary to the main

goals of attitude improvement and use promotion.

Anxiety Level

If professionals wish to promote positive attitudes toward and use of the condom, it would be most wise for them to include a consideration of persons' general level of anxiety. That is, a program to promote condom acceptance and use should, at some level, deliberately include measures designed to decrease general anxiety--especially anxiety about sensitive interpersonal topics.

For instance, in psychoeducational programs meant to promote safe sex, it would be helpful to determine the extent to which program participants are generally tense about condom use. Through questioning or the distribution of a brief screening instrument, the professional could assess anxiety levels across participants. He or she could then incorporate into the larger program one or more interventions meant to reduce anxiety.

Findings suggest that as people become more comfortable and effective in dealing with daily stressors, they are more likely to entertain more positive attitudes toward and to use the condom more regularly. It seems important to help anxious people become more at ease with delicate topics in general and with the topic of condom use in particular. As anxiety levels fall,

one potential effect should be that the person will more readily and easily incorporate the condom into a safe and enjoyable sex life.

Social Interaction

The ease with which a person engages others should be considered by the professional interested in improving contraceptive and prophylactic attitudes and use. It was determined that if persons are comfortable interacting with others they will be more likely to perceive the condom as a positive and useful device.

For these reasons, persons should be encouraged to explore ways they might more effectively and comfortably communicate and interact with others. Good communication skills are required in order to smoothly include consideration and use of the condom in sexual activity. Persons should be helped to improve upon at least basic sexual communication skills so that they might more effectively broach the topic of condom use and include it more regularly for contraception and prophylaxis. As condoms are included in situations so that sexual activity and gratification are not disrupted, the person is much more likely to use it frequently and to look upon it positively.

Tolerance and Inclusiveness

Present results also suggest that in helping a person to view the condom more positively and to become a more regular user of it, professionals should assess the extent to which that person has adopted a compartmentalized and exclusionary view of certain topics and groups of people. There is little doubt that a person must fully and personally own the fact that unintended pregnancy and/or the contraction of a sexually transmitted disease are very real possibilities for him or her specifically. A person is not called upon to see the condom as a device that can have real benefit in his or her life if he or she sees AIDS, other diseases, and unplanned pregnancy as problems that belong to and impact "some other" group.

Professionals should consider ways to help people understand that problems resulting from unprotected sexual activity can and do affect everyone--not just "certain people." Present results suggest that if they see the condom as a device that is personally relevant and as something that can and should be used by everyone in order to protect all from disease and unplanned pregnancy, people are more likely to have positive attitudes toward it and to use it more regularly.

One effective way to achieve greater openness to condoms would be to intervene at the systems, or societal, level. Professionals might endorse efforts to make condoms more accessible and readily available to a broader range of people. It would be wise to make condoms a part of everyday culture and to make them more visible by removing limits on things such as advertisements, retail outlets (e.g., vending machines), and other forms of public discourse. By making condoms more a part of the social fabric and by reducing the "us versus them" mindset that surrounds them and their use, condoms can be made more a part of the mainstream. And, as people realize that condom use can be an important, beneficial, and personally meaningful issue in their own lives, attitudes and use will likely improve.

Expression of Gender Roles

Results also suggest an effective way to improve attitudes toward and use of the condom is to encourage individuals to examine their personal definitions of what is appropriate for men versus women. It was shown that persons will use the condom less frequently and have more negative attitudes toward it if they adhere closely to traditional definitions concerning what are proper roles and behaviors for the genders.

Men and women might be helped to consider the notion that no behavior, intention, or aspiration need be reserved for one gender exclusively. If people are more accepting of the idea that they can and should pursue their personal goals regardless of gender, they are much more likely to see how the condom can ensure their own happiness. That is, if a person can be helped to find rewards in areas of life that are in addition to the traditionally defined roles for men and women (e.g., provider or care giver) they are more likely to pursue alternative sources of gratification and to see that the condom can help them to avoid situations (e.g., unplanned pregnancy) that might hinder them from realizing their potential. This seems to be essentially a matter of broadening horizons; as people become more aware of alternatives available to them, they can be expected to have more positive attitudes toward and to use the condom more regularly.

Importantly, there are two major components of the feminine and masculine orientations that may explain much of the variance in attitudes and use attributable to gender role. These "key ingredients" in femininity and masculinity are known, respectively, as expressiveness and instrumentality.

Those who are traditionally feminine are understood

to regularly display a tendency toward the expression of nurturance and the provision of emotional support to others. Since their role is often one of care giving, traditionally feminine persons are fundamentally supportive of others' wishes and they readily express an understanding of and agreement with others. They display tolerance and they often concur, comply, and even passively accept decisions made by others.

In their efforts to provide nurturance, feminine persons may too readily defer to the desires of others and to minimize their own needs, wishes, and intentions. Hence, feminine persons tend to respond to others and to forego an assertion of their own issues. Indeed, previous authors have observed that involvement in relationships is less protective for feminine persons than for their partners.

In contrast, those who are strongly masculine are said to have predominately instrumental traits. As such, these individuals tend neither to display their own emotions nor to consider the emotions, desires, or preferences of others. Masculine persons are understood to focus instead on the results of their interactions with others. That is, they tend to see interaction as a means to some end and their behavior in relationships is more goal directed. Unlike expressiveness,

instrumentality results in these persons concentrating less on the process of the relationship and more on the outcome.

By minimizing process issues in most relationships (i.e., by down-playing the expression of emotions, support, and/or nurturance), masculine, or instrumental, persons do not hold interaction and discourse as goals in and of themselves. Whereas expressive persons usually achieve a sense of gratification merely through interaction, and, whereas they see the expression of nurturance or support as a worthy goal in its own right, instrumental persons see such as primarily a way to realize their ultimate intentions. This can result, then, in a lack of adequate consideration of desires and preferences.

Therefore, the impact of gender role orientation on attitudes toward and use of the condom might be best understood in terms of the relational focus generated by expressiveness and instrumentality. A feminine gender role orientation might inhibit positive attitudes toward the condom and might result in less frequent condom use because these individuals are not focused on their own needs. They are less protective of themselves--both emotionally and physically--and are, therefore, less inclined to carefully consider the issue of protected

sexual intercourse and to assert any desire to utilize a condom.

Masculine persons are also unlikely to have positive attitudes toward the condom and they probably are less frequent users of the device because it is not consistent with the primary objectives of sexual intercourse: gratification and/or procreation. Moreover, condom use is more a process issue than a goal. Using a condom requires partners to actively express their apprehensions and to hear and carefully weigh the concerns of the other. Such does not lead to a direct fulfillment of the main objectives of intercourse and is, in result, not emphasized by masculine persons.

Thus, when viewed in terms of instrumentality and expressiveness, the promotion of both masculine and feminine traits entails that the person would be helped to recognize the value of tending actively to his or her own desires for self-protection while also recognizing that condom use is a worthy goal in its own right, or, at least, that it is not entirely inconsistent with many of the objectives of sexual intercourse. Thus, the person can be helped to carefully consider and tend to the needs, desires, and intentions of his or her partner while not neglecting his or her own desires for self-protection.

The impact of gender role orientation seems also a matter of what persons consider to be the appropriate concerns for their partners as well as for themselves. For example, a masculine person may tend to see protection through condom use as something that is not his or her responsibility. He or she may perceive contraception and/or prophylaxis as an issue that is more rightly a concern for persons with a more feminine orientation. In such a case, the masculine person is able to avoid a careful consideration of condom use and is not called upon to personally examine and work to change behaviors that may place him or her at risk.

Similarly, a person who has a traditionally feminine orientation may be overly concerned that to suggest a condom would be to indicate a lack of trust, compassion, or morals to his or her partner. Due to such reasons, the traditionally feminine person may defer to what he or she interprets as the other's wishes or intentions. Perhaps feminine persons too readily acquiesce and allow the sexual encounter to be defined by their partner, which might result in condoms and condom use never being considered.

Since it was found that nontraditionally oriented persons have more positive attitudes and use the condom more frequently, it would be wise to increase persons'

recognition of the strengths of both gender roles and to encourage a simultaneous expression of both feminine and masculine traits. In this way a person might more readily see condom use as his or her responsibility and as something that he or she may rightly introduce as a topic for negotiation.

Demographics

Since none of the demographic variables were found to significantly impact condom attitudes and use, firm conclusions that they are important to the prediction of these variables cannot be drawn from the present study. There is evidence from the literature that race, gender, and sexual orientation may indeed be useful; for this reason present findings may be in contradiction to earlier reports. The present findings, however, are not entirely inconsistent with the literature; some authors have also found these demographic variables to not be significant in their research.

Limitations of the Present Study

Perhaps the major limitation of this study concerns the very low numbers of individuals in the sample who represented the bisexual, gay, and lesbian sexual orientations. The overwhelming majority (94.4%) of the

participants in this study were heterosexual. Of all the participants, only 2 were bisexual, while 7 were gay, and 3 were lesbian.

Another limitation that is perhaps just as important pertains to the representation in the sample of various racial groups. Fully 79% of the 214 subjects in this study were white. There were just 4 participants who were Asian, 5 were Hispanic, 32 were African-American, and only 4 responded "other" when indicating their group affiliation.

While both genders were adequately represented, this demographic factor was also found not useful in predicting the linear combination of dependent variables. The reasons for this are not entirely clear. However, the fact gender did not prove to be a significant variable is not entirely inconsistent with previous research. There is contradictory evidence in the literature concerning the impact of gender upon a range of condom-related issues; some studies have found it to be a useful variable while others have suggested its impact is not significant. Importantly, gender did nearly prove to be a useful factor in the present study; the analysis using gender as the predictor of the linear combination of dependent variables generated a p value of .0567.

Moreover, the sample is comprised largely of college students and of people who are in their early to mid 20s. This represents another limitation in terms of how representative the present sample is of the general population. However, it should be noted that the sample is quite large and was drawn from three widely-spaced states (Michigan, Tennessee, and Florida). These facts help to generalize the findings to the broader population.

Implications for Future Research

An important aspect of this study is that it demonstrated the efficacy of neuroticism, extraversion, authoritarianism, and gender role orientation in the prediction of attitudes toward the condom as contraceptive, attitudes toward the condom as prophylactic, and actual condom use. Thus, the present study has established these factors as useful to the ongoing efforts to improve contraception and prophylaxis. Importantly, the present study demonstrated that these are factors that should be included in any attempt to design an intervention to improve condom acceptance and use. Hopefully, professionals can learn from these results that to improve condom acceptance and use, one should address anxiety level, communication skills, rigid or

authoritarian views, and gender role orientation. Hence, the results are suggestive of some potentially interesting lines of future research.

It would likely be helpful to determine "in the field" the precise impact that these variables have on actual attempts to change attitudes and use. In this respect, efforts to determine how best to incorporate these factors into an effective intervention strategy would be most beneficial.

Perhaps future research could involve the use of pretest measurements of attitudes and usage rates and then apply one or more selected interventions meant to influence neuroticism, extraversion, authoritarianism, and/or gender role orientation. This intervention might be followed by a posttest measure of attitudes and use to determine if any changes in the factor(s) actually resulted in improvements. In this way, the present results are taken out of the "laboratory" and are tested by actual and specific interventions. By utilizing these factors in a pretest-posttest situation, professionals may garner a better appreciation for and understanding of just how they can be used to influence acceptance and use of the condom in contraception and prophylaxis.

Also, since the present study did not affirm the

usefulness of gender, race, and sexual orientation in the prediction of attitudes and use, it would be appropriate for future research to more carefully investigate these variables. One possible reason significant effects were not recorded for these demographic variables might be that there were inadequate numbers of persons in the sample who represented the various groups. Future studies might, therefore, improve on the current one by making certain there are larger numbers of individuals in the sample who represent each of the gender, racial, and sexual orientation groups.

Including a broader range of racial groups might also represent an improvement. Only four groups were specifically identified by name, which might have prevented this factor from having a significant effect. More groups, with adequate representation in each, could demonstrate that this variable is more powerful than is suggested by the present results.

Another important implication for future research is the suggestion from present results that gender is potentially an important variable to consider when working to influence condom acceptance and use. Gender clearly approached significance as a predictor in the present study; that is, the impact of this variable upon the linear combination of attitudes and use was very

close to being statistically significant. A replication of this study may well find that gender can have a significant impact.

Finally, the results of the present study have revealed that a number of personality characteristics are useful in predicting and influencing condom acceptance and use. It is hoped the findings may stimulate interest so that research in this area is opened to a range of variables and personal attributes that might otherwise have not been considered.

Appendix A

Informed Consent to Participate in Study

Western Michigan University
Department of Counselor Education and
Counseling Psychology

Principal Investigator: Joseph R. Morris, PhD

Student Investigator: J. Lee Hoover, MA

I have been invited to participate in a research project entitled "Attitudes Toward and Use of the Condom as a Prophylactic Versus Contraceptive: The Impact of Selected Personality Factors." I understand that this research, which is Lee Hoover's doctoral dissertation project, is intended to study how certain personality traits influence persons' attitudes toward and use of the condom as both contraceptive and prophylactic. I understand that the personality traits to be measured are (a) neuroticism (or general level of anxiety), (b) extraversion (the extent to which a person is socially outgoing), (c) authoritarianism (the tendency to be "set in one's ways"), and (d) gender role orientation (the extent to which a person is masculine or feminine in nature). I further understand that I will be asked about my attitudes toward condoms and about my pattern of condom use.

My consent to participate in this project indicates that I will engage in one, 30 to 40 minute session wherein I will read several multiple choice-type questionnaires and respond to them on paper. I understand

that there are six (6) questionnaires. They are:

(a) the NEO-Five Factor Inventory, (b), the Public Opinion Scale, (c) the Bem Inventory, (d) the Attitudes Toward Condoms Scale, (e) the Condom Attitudes Scale, and (f) the Condom Use Questionnaire. Completing the questionnaires is the only thing I will be asked to do and when I complete them my participation in this project is ended.

As in all research, there may be unforeseen risks to the participant. If an accidental injury occurs, appropriate emergency measures will be taken; however, no compensation or treatment will be made available to me except as otherwise specified in this consent form. I understand that I may find some of the questionnaire items embarrassing; I also understand that I am free to choose not to respond to any or all of the items I find embarrassing or otherwise disturbing.

One way in which I might benefit from my participation is that I will be called upon to examine some personal characteristics, attitudes, and opinions; this examination might lead to greater self-awareness and understanding. I may also gain a better appreciation of my attitudes toward and/or actual use of condoms which may help me better avoid sexually transmitted disease and/or unplanned pregnancy. My participation is also

likely to result in the study's contribution to the understanding of how condom-related attitudes and behaviors tend to be influenced by personal characteristics. Through such understanding it may be possible for professionals to more effectively check the spread of sexually transmitted diseases and to curb unplanned pregnancy in our society.

I understand that all the information collected from me is confidential. That means that my name and any other information that might personally identify me will not appear on any papers upon which information is recorded. All the answer sheets are numbered and will be distributed among all the participants in random order. This number can in no way be used to identify any answer sheet as having been mine. After the data have been collected and analyzed, the answer sheets will be retained for three (3) years in a locked file cabinet in Lee Hoover's office.

I understand that I may refuse to participate or to quit at any time during the study without prejudice or penalty. If I have any questions or concerns about this study, I may contact either Lee Hoover at (904) 422-3709 or Joseph R. Morris at (616) 387-5100. If questions or problems arise during the course of the study I may also contact the Chair of the Western Michigan University

Human Subjects Institutional Review Board or the Vice President for research at that university. Also, I may contact the Chair of the Middle Tennessee State University Institutional Review Board. My signature below indicates that I understand the purpose and requirements of the study and that I agree to participate.

Signature

Date

Appendix B

Protocol Clearance From the WMU Human Subjects Institutional Review Board

Human Subjects Institutional Review Board

Kalamazoo, Michigan 49008-3899
616 387-8293

WESTERN MICHIGAN UNIVERSITY

Date: March 13, 1995**To:** Hoover, James Lee**From:** Richard Wright, Interim Chair**Re:** HSIRB Project Number 95-03-06

This letter will serve as confirmation that your research project entitled "Attitudes towards and use of the condom as a prophylactic versus contraceptive: The impact of selected personality factors" has been approved under the exempt category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you must seek specific approval for any changes in this design. You must also seek reapproval if the project extends beyond the termination date. In addition if there are any unanticipated adverse or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: Mar 13, 1996**xc:** Morris, Joseph R., CECF

Appendix C

Protocol Clearance From the MTSU Institutional Review Board

MTSU**ON-CAMPUS MEMO**

TO: James Lee Hoover and Dr. Jwa K. Kim
Department of Psychology

FROM: Mitchell Chamberlain *Mitchell Chamberlain*
Chair, MTSU Institutional Review Board

RE: Attitudes Toward and Use of the Condom as a Prophylactic Versus
Contraceptive: The Impact of Selected Personality Factors. Protocol
No. 95054ED

DATE: March 7, 1995

Since your research involves only the use of survey procedures and does not identify the participants, it is exempt from the informed consent requirements of 45 CFR part 46 and is approved by the MTSU Institutional Review Board. This approval is granted for one year only and must be reviewed by this committee on an annual basis if this project continues beyond the next 12 months; likewise any changes in the protocol require resubmission of your project for committee approval.

Appendix D

Permission to Use the Authoritarianism Scale



S I M O N & S C H U S T E R

113 Sylvan Avenue
Englewood Cliffs, NJ 07632
201-592-2000

10 March, 1995

James Lee Hoover
1301 Charlotte Drive
Pulaski, TN 38478

Dear Mr. Hoover,

We are glad to give you permission to reprint material from our text titled: **INTROUDUCTION TO PERSONALITY**, by Byrne & Kelly

in accordance with the conditions outlined in your letter of 7 March, 1995.

Please give credit as follows: Reprinted by permission of Prentice-Hall, Englewood Cliffs, NJ 07632.

Thank you for your interest in our titles.

Sincerely,

Greg Callison
Sr. Copyright Editor

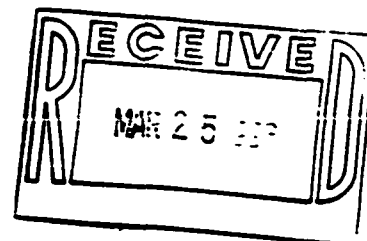
Appendix E
Permission to Use the ATCS

TO: THE SOCIETY FOR THE
SCIENTIFIC STUDY OF SEX
BOX 208
MOUNT VERNON IA 52314

FROM: JAMES LEE HOOVER, MA
1413 PULLEN ROAD APT E
TALLAHASSEE FL 32303
(904) 422-3709

DATE: 15 March 1995 *[Signature]*

RE: Permission to Use Printed Material



To whom it may concern:

I wish to reproduce twenty (20) copies of the Attitude Toward Condom Scale contained in the Journal of Sex Research as specified below:

Brown, I. S. (1984). Development of a scale to measure attitude toward the condom as a method of birth control. Journal of Sex Research, 20, 255-263.

I am a doctoral student in Counseling Psychology at Western Michigan University and wish to use this questionnaire in my research.

Please direct all correspondence to me at the address and phone number above. Thank you.

PERMISSION GRANTED

[Signature]
Howard J. Ruppel, Jr., Ed.D., Ph.D.
Executive Director

3/26/96

Appendix F
Permission to Use the CAS and CUQ

July 27, 1992



J. Lee Hoover, M.A.
Graduate Assistant
Counselor Education and
Counseling Psychology
3102 Sangren Hall
Western Michigan University
Kalamazoo, MI 49008

Department of Psychology
College of Arts and Sciences
University of South Florida
4202 East Fowler Avenue, BEH 339
Tampa, Florida 33620-8200
(813) 974-2492
FAX (813) 974-2668

Dear Colleague:

Enclosed is a copy of the Condom Attitude Scale. Please feel free to use the CAS for research or treatment purposes. In return, I ask that you send me a brief report of how you used the scale, your results, and other relevant observations. I will be pleased if you use the scale and look forward to your feedback. I thank you in advance for your cooperation.

Please note that the CAS scale format is currently set up for subjects to respond on a computer answer sheet. If you wish respondents to answer directly on the questionnaire, then I suggest the following format: keep the response options printed on the top of each page and follow each questionnaire statement with the numbers corresponding to the response options; i.e., 0 1 2 3 4 5 6. Then subjects can simply circle the answer that corresponds to their choice.

Example:

If my partner suggested using a condom,
I would feel grateful.

0 1 2 3 4 5 6

Given the factor structure of the CAS, it will be important for you to score the subscales separately, rather than use it simply as a unidimensional scale. Although the total CAS score can be analyzed and is meaningful, examining subscale scores will reveal much more about the relationship between condom attitudes and condom use. Consequently, I am sending a list of the items according to the factors on which they load, along with factor loadings. No item has a factor loading of greater than .30 on any other factor. You can treat each factor as a separate subscale. Scoring can be accomplished by simply adding the subjects responses to the subscale items as you would any scale. Of course, please be aware that some items are worded negatively

TAMPA

ST. PETERSBURG

SARASOTA

FORT MYERS

LAKELAND

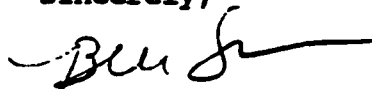
UNIVERSITY OF SOUTH FLORIDA IS AN AFFIRMATIVE ACTION EQUAL OPPORTUNITY INSTITUTION

(i.e., indicate a negative attitude toward condom use) and thus must be scored in the reverse direction. Each item that should be reversed scored is indicated by an "R" at the end of the statement. The "R" should not be included in copies completed by respondents.

If you have any questions about any aspect of the CAS, please feel free to contact me by phone or mail. I am enclosing an article that describes the development and psychometric properties of the CAS.

I am also enclosing a copy of the Condom Use Questionnaire, which is described in the enclosed article. When using the CUQ, please remember that subjects are provided with an eighth response option for indicating that they would not (did not) have sex in the situation described. Please feel free to contact me if you wish any further information on the CUQ.

Sincerely,

A handwritten signature in dark ink, appearing to read "Bill S.", with a long horizontal flourish extending to the right.

William P. Sacco, Ph.D.
Associate Professor

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