A Dissertation
Submitted to the Faculty
of
Xavier University
in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Psychology
by
William J. Bobowicz, Jr.
May 16, 2002

Approved:

Christine M. Dacey, Ph.D.
Chairperson, Department of Psychology

Suzanne Norman, Ph.D.
Dissertation Chair
Older Adults' Personality Traits and HIV Risk
Dissertation Committee

Chair
Suzanne Norman, Ph.D.
Assistant Professor of Psychology

Member
C. Walker Gollar, Ph.D.
Associate Professor of Theology

Member
Karl W. Stukenberg, Ph.D., ABPP
Associate Professor of Psychology
Acknowledgements

I would like to thank my committee members for their time and effort in challenging me so that this project could grow and reach completion. Their patience and their treating me as a colleague were most appreciated. Thank you to Dr. Gollar, Dr. Norman, and Dr. Stukenberg. Special thanks need to go out to Dr. Norman for all of the time she devoted as my dissertation chair. Her vision, enthusiasm, and caring should be a model for all professors.

I would like to thank the participants in my study. It is challenging to open-up and reveal things about oneself, not knowing how it will be used. Thank you for stepping out of your comfort zone.

Finally, I would like to thank my friends and family. I know that this sounds cliché, but without them the completion of my dissertation and doctorate would not be possible. They have truly been there to help me keep things in perspective and to keep my sanity over all these years.
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Introduction

The relationship between personality traits on the NEO-Five Factor Inventory (NEO-FFI) and sexual practices reported on the Bobowicz Sex Inventory (BSI) will be investigated in an older adult sample (aged 60 and older). With research done by Eysenck (1976) and others, it appears that there is a relationship between personality traits and sexual practices that are at risk for acquiring HIV. Little research has been conducted in this area with older adults while individuals over 50 make up 10 percent of the newly acquired HIV cases (Hinkle, 1991; Nocera, 1997; and Whipple & Scura, 1996). Single, divorced, and widowed older adults are increasing their risk by engaging in promiscuous sexual relationships, and not using the necessary safe-sex precautions (i.e. condoms). Based on previous research in this area with younger adults, predictions were made regarding how personality traits relate to knowledge about acquiring HIV and risky sexual behaviors.
Chapter I
Review of the Literature

Human sexuality appears to fascinate our society. Sex has been an area of interest for most societies throughout the millennia. While much research has been conducted in the area of human sexual behavior, little research has explored the relationship between an individual's personality traits and his/her sexual behavior. In an age where the Human Immunodeficiency Virus (HIV) and other infectious diseases are acquired through risky sexual behavior, there is very limited research on the relationship between personality traits and risky sexual practices.

Personality and Human Sexual Behavior

Eysenck's Sex and Personality (1976) is considered the classic study of the relationship between sexual behaviors, sexual attitudes, and personality traits. In this study, 423 male and 379 female college students (ages 18 to 22) were administered two self-report inventories under complete anonymity. The first inventory measured the students' sexual attitudes and their sexual behaviors with...
categories such as: sexual satisfaction, sexual excitement, sexual nervousness, premarital sex, homosexuality, and promiscuity. It was constructed by combining a few existing questionnaires with an emphasis placed on a questionnaire designed by Thorne (1966) to investigate sexual attitudes and behaviors. The second inventory measured the students' personality traits based on Eysenck's model of personality, which consists of three major dimensions: E (extraversion: outgoing and gregarious), N (neuroticism: anxiety, depression, and obsessive tendencies) and P (psychoticism: socially unacceptable thoughts and behaviors and an inability to control impulses). There was also a L (lie) dimension that acted as a validity scale for the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975).

Eysenck found that the scales on the questionnaires (sexual attitudes and behaviors, and the EPQ) were intercorrelated. The results demonstrated a relationship between personality types and particular sexual attitudes and behaviors. Under the N dimension, Eysenck indicated that high N scorers tended to have high feelings of guilt and low satisfaction regarding sexual activity. "Sexual behavior is seen as troublesome and disgusting, and the high N scorer stresses his inability to contact members of
the other sex; in spite of all this he has strong sexual drives which he finds it difficult to control" (Eysenck, 1976, p. 56). Those who scored high on the E scale tended to be less nervous and more promiscuous with sexual experiences than the low E scorer (introvert). According to Eysenck, the E scale was viewed as the "non-pathological" scale of sexual adjustment in that either extreme led to relatively healthy ways of behaving sexually. The extrovert had more freedom and less guilt in sexual contact, whereas the introvert upheld fidelity in relationships and virginity as his/her strengths. Both strengths can be healthy, depending on how they combine with the other two scales. Finally on the P dimension, high P scorers were characterized as feeling deprived of sexual contact; they were not satisfied with their sex lives. High P scorers felt hostility toward their sex partners and tended to suffer from "perverted" thoughts, which they did not wish to possess.

In a study similar to Eysenck's, Barnes, Malamuth, and Check (1984) investigated the relationship between personality traits and sexuality using the EPQ (Eysenck and Eysenck, 1975) and a sexuality questionnaire devised by the researchers. The questionnaires were administered to 307 male students (mean age of 19 years) in an Introduction to
Psychology course. Similar to Eysenck’s results, Barnes et al. (1984) found that high E scorers tended to have more positive thoughts toward popular sexual behaviors, as well as some of the more taboo behaviors (e.g., group sex). High E scorers were characterized as having more sexual experiences than low E scorers. High P scorers tended to have more perverse sexual thoughts and had thoughts of forcing their partners into sex. However, there was no significant relationship between P and sexual behaviors. Likewise, the results of Barnes et al.’s study were inconsistent with Eysenck’s in regards to the N scale in that the N scale did not correlate with sexual attitudes. Moreover, the sexual behaviors of high N scorers consisted of the use of force and more homosexual behaviors than low N scorers. These inconsistencies may reflect Barnes’ all male sample since men are more likely to engage in aggressive behaviors than women. Further, the males with high scores on the N scale may have a greater propensity to use force in sex because of their high levels of sexual guilt and an “inability to contact members of the opposite sex” (Eysenck, 1976, p. 56). According to Eysenck’s data, these individuals continue to have strong sexual urges, yet are unable to satisfy them. Eventually, they may become driven to use force to gain a sexual partner to quench
their drive. As far as those who score high on the N scale engaging in more homosexual behaviors, it could be that these individuals are homosexuals who are not comfortable with their homosexuality. As a result of not being comfortable with who they are, they tend to experience excessive guilt which could result in neurotic behaviors elevating their N scale scores.

The EPQ was also used in a study investigating the relationship between personality and sexual risk-taking (Fontaine, 1994). The subject pool consisted of 74 single British males between the ages of 18 and 35 years. The participants were administered the EPQ and a 13-item questionnaire, designed by the researcher with the purpose of measuring different sexual behaviors. High scores on the questionnaire indicated sexual risk-taking. The items from the two measures were intercorrelated with results showing some similarity to Eysenck’s research. High P scorers demonstrated a greater likelihood of “having sex with a bisexual partner, having sexual relations with an intravenous drug user, having sex with a promiscuous partner, having unprotected anal intercourse, having sexual relations with different partners, and having sexual relations with people one meets while on holiday” (Fontaine, 1994, p. 693). The high N scorers, on the other
hand, were more likely to not engage in any of the risky sexual behaviors. The high E scorers showed a greater likelihood of only engaging in "French Kissing."

Consistent with Eysenck's prediction, the high P scorers tended to engage in riskier sexual behaviors, while the high N scorers did not usually engage in risky sexual behaviors. However, the high E scorers tended not to engage in risky sexual behavior. This conflicts with Eysenck's finding that high E scorers are characterized by promiscuous, risky sexual behavior (Eysenck, 1976).

In another study looking at the relationship between personality and HIV risk, McCown (1991) used the EPQ in conjunction with the Basic AIDS Knowledge Survey (BAKS) to measure the basic HIV prevention knowledge possessed by an individual in relation to their personality traits on the EPQ. In the first part of his study, 146 male and 169 female adults (average age 36) who were not employed in the medical professions, nor had any previous formal HIV prevention training, were administered the EPQ and BAKS upon entering a medical center. Analyses yielded a significant negative correlation between N and HIV knowledge. Therefore, those who were highly neurotic tended to have little knowledge about HIV prevention. According to Eysenck's theory, the neurotic personality
tends to be bothered by issues of sex, and he/she would probably avoid anything dealing with sex. Thus, information about HIV prevention may not be learned because of the neurotic person’s discomfort with talking about something so sexually laden.

In the second part of McCown’s study (1991), the Brief EPQ-R (Eysenck, Eysenck & Barrett, 1985) and the BAKS were administered to 86 gay men, six months after they received formal HIV prevention training. Likewise, seven other measures of unsafe HIV related practices - that came from the U. S. Surgeon Generals Report on AIDS - were given to these men. These measures consisted of frequencies of engaging in several practices linked to acquiring HIV, such as anal intercourse without a condom and needle sharing without bleach disinfectant. The results indicated that while these men had mastered the knowledge about how to prevent HIV acquisition, those with high scores on P, E, or N were still most likely to engage in unsafe sexual practices. Thus, even with the knowledge of how to prevent oneself from acquiring HIV, an individual’s inclinations, as determined by his or her personality, seems to have a stronger influence than knowing about how to reduce risk.

Murphy, Coleman, and Haynes (1986) used the EPQ with measures of “sexual arousal, social perception, personality
variables, attitudes toward women, and self-reported likelihood to rape" (Murphy et al., p. 255) to determine the factors that are related to rape and coercive sexual behavior. The EPQ, along with the numerous other measures, were administered to 208 adult heterosexual males in Memphis, Tennessee. The data from the measures were analyzed through an Analysis of Variance (ANOVA), indicating that E and N on the EPQ were "significant predictors of self-reported coercive behavior" (Murphy et al., p. 270). This finding is consistent with the Barnes et al. (1984) study, and may be explained theoretically using Eysenck's model. That is, those scoring high on the N scale may engage in forceful sexual behavior because they have a strong need to satisfy their sexual drives. However, they are unable to do so in a healthy way due to high levels of guilt about sex and having difficulty in relating to members of the opposite sex in appropriate ways.

The last study reviewed using the EPQ focused on the sexual attitudes and practices of female high school seniors (Moram, Rosenthal, Tolley, Peeler, and Dorko, 1991). A 61-item questionnaire measuring dating and sexual attitudes and practices was administered with the EPQ to 153 African-American and European-American female high
school students (between the ages of 16 and 18). N and P positively correlated with sexual activity and liberal attitudes toward premarital intercourse. The results for the N scale are quite interesting since they ran contrary to what was predicted and obtained in the past, namely that highly neurotic people usually tend to have less sexual activity and more conservative sexual attitudes. However, Muram et al. explained the results by stating that high N scorers generally would submit to the advances of others, simply to get through the anxiety that they are experiencing. Therefore, the highly neurotic female adolescent would have more sexual experiences than the non-neurotic female, because she is unable to say "No" to the requests of her male partner.

From the literature reviewed, it may be difficult to see a clear relationship between personality and sexuality. Some of the studies contradict each other and display completely opposite findings. However, in regards to the E and N scales on Eysenck's EPQ there appears to be some trends: high E scorers generally engage in more sexual activity and have more positive feelings toward sexual activity; high N scorers generally engage in less sexual activity and have a significant amount of anxiety and guilt associated with sexual experiences. Furthermore, high N
scorers seem to engage in coercive and "deviant" sexual behavior when they engage in any sexual acts.

*Personality and Human Sexual Behavior in Older Adults*

The literature on human sexuality and personality to date focuses on U.S. College students or young adults and there is almost no literature that includes older adult participants. Eysenck (1976) replicates his first study with college students extending the age of his sample to include older adults (427 males and 436 females between the ages of 18 and 60 years old, with an average age of 30 years). There is no indication in his report as to how many of those participants were 60 years old. However, he indicates that there is relatively no change between the trends of the college students and the adults in his second study. High E scorers tended to have more sexual activity, and were more satisfied with their sexual encounters, while high N scorers engaged in less sexual activity and were more anxious and guilt-ridden over issues of sex. Likewise, the high P scorers continued to engaged in more deviant and aggressive forms of sexual behavior. Given the paucity of literature on the sexual behaviors of older adults in relation to their personality traits, more research in this area is clearly needed.

*The Five-Factor Model of Personality and Human Sexual*
Behavior

To replicate and extend Eysenck's work in the area of personality and sex, a more contemporary model that correlates highly with Eysenck's model was developed. Through the research of individuals like Fiske (1949), Tupes and Christal (1961), Costa and McCrae (1985) and Digman (1988), there was increasing evidence that there are five factors, no more and no less, that describe individual differences in human personality. The Five Factor Model (FFM; Digman, 1990, and Goldberg, 1993) of personality came about through decades of research into the words that are used to describe personality traits. Through factor-analysis, five distinct factors emerged from an exhaustive list of words describing personality traits. These five factors or domains are essentially continua on which a person's personality exists. Any person can be at either extreme on each continuum; however, most people tend to lie somewhere in the middle of the two extreme ends of the factors. The factors/domains revealed through factor-analysis, are characterized by the words that clustered together to form the factors. Therefore, the naming of the factors is somewhat arbitrary and at the discretion of the researcher. Costa and McCrae (1985) applied the following widely accepted labels to the five factors: Extraversion
(Factor I; sociability and excitement seeking), Agreeableness (Factor II; altruistic interpersonal tendencies and social conformity), Conscientiousness (Factor III; the control of impulses and behaving responsibly), Neuroticism (Factor IV; emotional stability versus maladjustment), and Openness to Experience (Factor V; intellectual curiosity and tolerance of diversity).

In their personality measure, the NEO Five-Factor Inventory (NEO-FFI; 1985), Costa & McCrae measure the five factors. Whereas most individuals function normally in life, if one were to closely examine the traits of an individual, they would see that many people display some extreme behaviors and traits. As reflected in the NEO-FFI, these extreme behaviors may often compliment each other so a balance is maintained. Digman (1990) pointed out that Costa & McCrae have demonstrated that Eysenck’s model of personality and the FFM are related in that they found four of the five factors to be embedded within Eysenck’s three factors. E and N are the same in both of the models; P in Eysenck’s model correlates significantly with Costa & McCrae’s factors of Agreeableness and Conscientiousness; and there is no scale in Eysenck’s model that correlates with the Openness to Experience Scale. Thus, the NEO-FFI will serve to replicate as well as to extend previous work.
using the EPQ.

To date, little research has been done with the NEO-FFI in regards to sexual behaviors. In 1997, Bobowicz conducted a study on the relationship between personality traits on the extended version of the NEO-FFI -- NEO Personality Inventory - Revised (NEO-PI-R; Costa and McCrae, 1985) -- and risk for acquiring HIV among college students. In that study, no significant relationship was detected between E on the NEO-PI-R and risky sexual behaviors. However, N had a negative relationship with risk for acquiring HIV (high N scorers engaged in less risky behaviors). Furthermore, significant positive relationships between the Openness to Experience and Agreeableness scales, and risk for acquiring HIV were detected. Therefore, even with some inconsistencies between prior findings using the EPQ and the results of Bobowicz' study, there appears to be a relationship between personality traits measured on the NEO scales and sexual behaviors linked to HIV risk.

As already indicated this study intends to investigate the personalities of normal older adults. The NEO-FFI was designed to measure the personality traits of normal individuals. Other personality measures were designed with the purpose of measuring the personality traits of
individuals with abnormal personalities and/or mental illness (such as the MMPI-2), which is not the goal of this study. Therefore, the NEO-FFI will be used to measure dimensions of normal personality in this study.

**HIV and the Older Adult**

No matter what an individual’s views and opinions are about older adult sexuality (which can range from support, to disbelief, to shock and avoidance of the issue), the fact is there are older adults whom continue to have enjoyable and active sex lives. With what appears to be the increased longevity of the United States population, advances in health care and the treatment of sexual disorders (i.e. sex therapy, Viagra), changes in marital status (due to divorce or spousal death), and increased opportunities for diversity in sexuality and sexual activities (such as multiple sexual partners), it would also appear that older adults have more freedom and opportunity to maintain their involvement in sexual relationships late in life. However, with this freedom also comes an increased risk of acquiring HIV. The Centers for Disease Control and Prevention (CDC) have indicated that for all new HIV cases reported to the CDC, 10% of those have occurred in adults 50 years and older (Hinkle, 1991; Nocera, 1997; and Whipple and Scura, 1996). Hinkle,
in her review of the literature, reports that of the HIV cases in the 65 years and older population, 78% of those are acquired through blood transfusion. Since older adults are more likely than younger adults to need surgery it makes sense that the majority of HIV cases within this age group are acquired through this mode of transmission. However, almost a quarter of the new transmissions are the result of sexual contact or sharing of drug needles.
Nocera describes how most (65.8%) of these sexual transmissions are a result of homosexual or bisexual intercourse between men. However, while exact figures are not known, there appears to be an increase in sexual promiscuity among widowed and single older heterosexual men and women. The Episcopal Society For Ministry on Aging, Inc. (ESMA; 1999) and the Centralina Area Agency on Aging (CAAA; 1999) both indicate higher rates of homosexual/bisexual transmission of HIV (66%), than of blood transfusion (though that is still the second highest cause of transmission). Furthermore, both ESMA and CAAA indicate that it is heterosexual transmission that is growing at the fastest rate of all modes of HIV transmission. If most older adults do not know their HIV status, and with no need for birth control (particularly condoms), many more heterosexual HIV transmissions will
likely occur in the older adult population.
Chapter II

Rationale and Hypotheses

As discussed throughout this literature review, there is no research on older adult sexuality and personality, or older adult personality and HIV risk. With older adults making up 10% of the recently acquired HIV cases (Hinkle, 1991; Nocera, 1997; and Whipple and Scura, 1996), there appears to be an increased need for research into their sexual lives and possible predictors of their risk for acquiring HIV. Therefore, this study aims to measure the personality traits of older adults and how these traits relate to their reported sexual behaviors. Likewise, this study will attempt to predict which individuals would be more likely to engage in at-risk sexual behaviors for acquiring HIV so that they can be targeted for safe-sex education programs. Based on the previous research, there appears to be a relationship between personality traits and sexual attitudes and practices of young adults. Since no similar research has been done with older adults, research with young adults will be used to make predictions for this investigation. The sexual practices that are of interest
for this study are those that can lead to acquiring HIV, or risky sexual behaviors. However, in research with the NEO-PI-R there was no significant relationship between E and sexual behavior—although there were significant findings between E and sexual behavior on the Eysenck Personality Questionnaire (EPQ; Eysenck, 1976). The literature regarding Neuroticism (N) indicates that those who score high on the N scale tend to engage in less sexual activity, and become more anxious over things related to sex. Some studies indicate that N correlates negatively with more socially unacceptable sexual practices, when high N scorers engage in sexual activity. Based on previous research in this area, it is believed that high N scorers will have lower HIV risk scores, due to their lack of engaging in sexual intercourse and their fears and anxiety towards engaging in risky sexual behaviors.

With regard to the E scale, in research with the EPQ, Extraversion (E) related positively to frequency of sexual activity and sexual satisfaction. Bobowicz (1997) did not find any significant relationship between E on the NEO-PI-R and reported HIV risk. However, based on the research done with the E scale on the EPQ, it is predicted that E will have have a positive relationship with reported HIV risk (due to the frequency of sexual activity, and the greater
variability in partners and sexual practices).

Since there is virtually no research examining the relationship between Openness to Experience (O), Agreeableness (A), and Conscientiousness (C) and human sexuality, the predictions made using these three scales are based on facets of these scales and Bobowicz' (1997) research with college students. O is characterized by fantastic thoughts, an appreciation for aesthetics, and an appreciation for experiencing new sensations and feelings, and learning new things (Costa & McCrae, 1985). High O scorers will likely engage in unsafe sexual practices for the sensations and new experiences. A is characterized by trust, altruism and compliance (Costa & McCrae, 1985). High A scorers will likely engage in unsafe sexual practices out of a need to please or trust their partners' requests. Both of these hypotheses have been supported by Bobowicz' (1997) research. While Bobowicz predicted that C would have a negative relationship with reported risk for acquiring HIV, there was no significant relationship between C and the Risk scale on the Bobowicz Sex Inventory (BSI). Based on the previous information, it is hypothesized that:
1) N correlates negatively with reported engaging in risky sexual behavior for acquiring HIV (Risk scale on the BSI).

2) E, O, and A correlate positively with reported engaging in behaviors that put people at risk for acquiring HIV (Risk scale on the BSI).
Chapter III
Method

Participants

The sample will consist of 30 male and 30 female older adults (60 years of age and older) from the Greater Dayton area. Participants will be recruited from various senior centers, retirement and residential communities, health centers, life skills centers, and nursing homes, and will include members of both racial and sexual minorities. Members of the sample will participate as volunteers. Any participants with a known or suspected dementia, cognitive impairment, or severe psychiatric disorder (i.e. schizophrenia, bipolar disorder, etc.) will be excluded from this study. All participants will be treated according to the “Ethical Principles of Psychologists and Code of Conduct” (American Psychological Association, 1992). Thus, the informed consent of each participant will be obtained prior to their participating in this study, and each participant will be debriefed at the conclusion of the study.

Materials
NEO Five Factor Inventory (NEO-FFI; Costa & McCrae, 1985). The NEO-FFI measures personality using the Five-Factor model. The five domains of personality that the NEO-FFI measures are: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. The NEO-FFI consists of 60 5-point Likert scale items that can be completed in approximately 15 minutes. Raw scores on the domains are converted into T-scores (with a mean of 50 and a standard deviation of 10). The format of the NEO-FFI test forms was slightly altered to reduce any possible confusion for the participants: the position of the responses was changed so that they were located next to their corresponding question, and the print was enlarged to 14pt type to aid participants with decreased visual acuity.

Since the NEO-FFI is a shorter version of the NEO-PI-R, the reliability and validity of the NEO-PI-R will be addressed first. The normative sample for the NEO-PI-R consisted of 500 men and 500 women volunteers. Volunteers between the ages of 50-64 years old made up 19 percent of the sample, and volunteers who are 65 years of age and older made up 15.4 percent of the sample of men and 21 percent of the sample of women. The domain scales have been shown to have good internal consistency (average alpha = .73), test-retest reliability (test-retest coefficients
range from .51 to .82), convergent validity (with 12 different personality scales yielding 66 out of 150 correlations greater than .50 in absolute magnitude), and construct validity (Costa & McCrae, 1985). Hogan (1989) comments in Buros Mental Measurement Yearbook on the good reliability and validity of the NEO-PI-R. He notes that some commendable aspects of the measure are that it was normed on a non-clinical sample and that it demonstrates good discriminant and convergent validity with the EPQ, the Guilford-Zimmerman Temperament Survey, and other standard measures of personality.

With regard to the NEO-FFI, correlations between the NEO-FFI and the NEO-PI-R scales were .92, .90, .91, .77, and .87 for N, E, O, A, and C, respectively. Internal consistency scores for the NEO-FFI were .86, .77, .73, .68, and .81 for N, E, O, A, and C, respectively. Convergent correlation scores between the NEO-FFI and the NEO-PI-R ranged between .56 and .62 (all within acceptable levels), and none of the divergent correlation scores were above .20.

Bobowicz Sex Inventory (BSI; see APPENDIX E; Bobowicz, 1997). To measure sexual practices related to HIV transmission, a new measure needed to be developed. At the time of Bobowicz' research on safe sex practices of college
students, no tests were available to measure a wide range and variety of sexual behaviors, as well as those associated with acquiring HIV. Therefore, the BSI was created as a measure of risky sexual practices, and of sexual practices in general.

One issue in this development involved the determination of a definition of "safe-sex." This measure uses the recommendations for safe sex of the Gay Men’s Health Crisis (GMHC; see APPENDIX A; Gay Men’s Health Crisis, Inc., 1991), the oldest and largest non-profit AIDS organization in the world, as the criterion for differentiating what are risky sexual activities versus safe or safer sexual activities related to HIV. Anything that is in opposition to what is recommended by the GMHC’s guidelines will be considered risky sexual behavior.

The BSI consists of 8 Yes/No items that can be completed in approximately 10 minutes. In addition to the BSI questions, there are a variety of demographics questions for participants to disclose information on age, race, religious preference, sexual orientation, and current involvement in a sexual relationship. The questions are answered under the categories of Past Behaviors, Present/Recent Behaviors, and Future/Possible Behaviors. Certain questions indicate risky sexual behaviors based on
the GMHC’s recommendations for safe sex practices. These questions comprise the Risk scale on the BSI (6 Yes-No items, range of scale score is from 0 to 24; see APPENDIX F for scoring form). The BSI was evaluated for face validity by 17 male and 12 female students and non-students. These individuals provided feedback on the test’s clarity, ease of comprehension, and accuracy of capturing relevant information. This feedback was then used to modify the BSI prior to its initial use. In a similar fashion, the BSI will be piloted with sample of older adults to ensure comprehension and face validity. A normative sample, while ideal, was not a possibility for Bobowicz due to practical obstacles for obtaining significant normative data. However, since the BSI is simply a checklist of whether the individual performs a variety of behaviors, Bobowicz believed that the BSI would gather the necessary data on sexual behaviors that would place an individual at risk for acquiring HIV. Bobowicz' study supported the BSI as a measure of risky sexual behaviors. However, additional research using this measure is needed.

**Procedure**

The participants will be given the NEO-FFI, BSI, and a demographics questionnaire in group testing sessions. Once all participants are present for a session, the examiner
will pass out the "Informed Consent" forms (see APPENDIX B), explain the purpose of the study, and allowed the participants to read the forms and ask questions. After the "Informed Consent" forms are signed and collected, the examiner will pass out pencils and test packets. The test packets will consist of the three measures. Due to the possibly uncomfortable sexual content of the BSI, the demographics questionnaire will be completed first followed by the NEO-FFI, and the BSI. Each participant’s test packet will be assigned a number for the purpose of organization and anonymity. Upon completion of the three measurements, all materials will be returned to the examiner. Following completion and collection of the measures participants will be given a "Debriefing" form (see APPENDIX C), and questions regarding the study will be answered.
Chapter IV

Results

The design of the study will be correlational, utilizing a combination of bivariate and regression statistics. The bivariate correlation will be used to test the first hypothesis whereas a one to one relationship between the independent variable (IV) and the dependent variable (DV) will be explored. The Multiple Regression will be used to test the second hypothesis whereas the relationship of several IV's (E, O, and A) with a single DV (HIV Risk) will be analyzed. Descriptive statistics for the three measures will be provided.
Chapter V

Discussion

Once this study is complete, it is expected that there will be a significant relationship between personality traits and risky sexual behaviors in older adults. If this expectation is supported by the results, then it may indicate that there are older adults who are at more risk for acquiring HIV because of their personality traits. With a brief personality measure, such as the NEO-FFI, it may be possible to screen older adults and identify those at greater risk for HIV based on their personality traits. Programs can then be developed that will provide a more effective intervention for those individuals at greater risk for acquiring HIV due to the characteristics of their personality traits. In this day and age of cost effectiveness, it is necessary to determine what types of interventions would be most effective for different types of people, otherwise time and resources will be wasted. Those individuals who are more motivated to protect themselves or to seek out the safe-sex knowledge and put it to use will benefit more from a safe-sex workshop, or even
a self-help mode of education, while those who are not as motivated, may need another mode to communicate safe-sex knowledge and to encourage those individuals to practice it. It is those individuals who are resistant to safe-sex information or who do not apply the information once they get it that may need a more in depth and intensive intervention. Hopefully with this and other research proper interventions can be provided to those who need it most, while making it practical (in cost and time) to provide the intervention to those in need.
References


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England: Open Books.


Lincoln, Nebraska: University of Nebraska Press.


Clinical Psychology Monograph Supplement, 21, 30.


Appendix A

GMHC’s Guidelines for Safe Sex
(with corresponding question numbers on the BSI)

High risk sexual behaviors
• Engaging in anal or vaginal intercourse (receiving or inserting) without a condom (# 8-N).
• Swallowing the semen/ejaculate of one’s partner (# 3-Y).
• Sharing sexual toys with one’s partner, without cleaning them prior to sharing.

Moderate risk sexual behaviors
• Engaging in anal or vaginal intercourse (receiving or inserting) with a condom (#’s 5-Y, 6-Y, 7-Y).
• Performing oral sex upon the genitalia of one’s partner (# 1-Y).
• Having multiple sexual partners and/or partners who are known IV drug users.

Low risk sexual behaviors
• Kissing.
• Anal oral sex.
• Fisting, S/M, and Water Sports.
• Masturbation with another person.

No risk sexual behaviors
• Fantasy.
• Pornography.
• Dry humping.
• Playing with a partner’s nipples.
• Hugging.
• Masturbation.
Appendix B

Informed Consent - Personality, Knowledge and Individual Practices

This study is intended to investigate the relationship between personality traits, sexual knowledge and sexual practices. You will be asked to participate in completing a series of questionnaires that will take approximately 45 minutes to complete. The questionnaires will cover such topics as thoughts, feelings, interests, beliefs, and personal history (particularly in the area of sexual behavior). Some questions involve explicit sexual content that may or may not apply to you. **All responses will remain completely confidential and secured by the investigators. Do not put your name on any of the questionnaires.**

By participating in this study, you may be at risk for experiencing increased anxiety or maybe uncomfortable with some of the questions that are asked. Likewise, you may find some of the questions offensive or too personal to respond to. Therefore, you may experience some distress from responding to the questionnaires. However, you are free to withdraw from the study at any time without penalty. Further, while it is asked that you complete all questions in full honesty, you may refuse to answer any question that you find objectionable.

I understand the purpose of the study, and have been given the opportunity to ask questions of the investigator, William Bobowicz. I understand that if I have any questions later, I may call Dr. Suzanne Norman at 513-745-3249, or William Bobowicz at 937-439-3684. I agree to participate under the conditions stated above.

______________________________  ________________
Signature of Participant                  Date

I have explained the purposes of the study and agree to abide by the conditions stated above.

______________________________  ________________
Signature of Investigator                  Date
Appendix C

Debriefing - Personality and Sexual Practices

Thank you for participating in this study. The information that you have provided will be useful in furthering the research in personality and sexuality. Also, you have assisted a clinical psychology graduate student in completing his doctoral dissertation.

The questionnaires that you have completed are examples of self-report personality and sexuality measures. These tests are designed with the idea that your report about your thoughts, feelings, knowledge and behaviors says something important about your personality and/or behaviors outside of the testing situation. The purpose of this study was to investigate whether there is any relationship between one’s personality traits and one’s sexual practices. Likewise, this study was attempting to predict what types of personality traits would make an individual more susceptible for engaging in risky sexual behavior for acquiring the HIV virus that causes AIDS. Since 10% percent of all new HIV cases are in those people who are 50 and older, it is now more important than ever that research into the sexuality of older adults is investigated. Again, thank you for your time and effort into this important cause.

If you have any questions or concerns, please call Dr. Suzanne Norman at 745-3249, or the Xavier University Department of Psychology at 745-3533.

If you have wish to find out more about this type of research, the following references will be of use to you:


Appendix D

DEMOGRAPHIC QUESTIONNAIRE

Demographic Information (please circle or fill in the blank)
Age: ______

Sex:  male    female

City that you live in or near: Cincinnati  Dayton

Years of education:  none
grade-school only  high school only  trade school
(1, 2, 3, 4, 4+)  college graduate/professional school

Your current approximate income:
below $20,000  $20,000-$40,000  $40,000-$60,000
$60,000-$80,000  $80,000-$100,000  over $100,000

Your current employment status:
Retired  Full-time  Part-time  Unemployed

What is/was your occupation?

Ethnic Background:  African-American  Native-American
Latino  Asian  Caucasian  Other

Religion that you identify yourself as belonging to:
Protestant  Roman Catholic
Non-denominational Christian  Orthodox
Judaism  Islam  Buddhism  Hinduism
Native American  New Age  None
Other

Are you currently active in your religion?  Yes  No

Do you consider yourself a devout member of your religion?  Yes  No

Do you believe sex outside of marriage is wrong or sinful?  Yes  No
How would you describe your sexual orientation?

- **Heterosexual** (prefer partners of the opposite sex)
- **Homosexual** (prefer partners of the same sex)
- **Bisexual** (prefer partners of both sexes)

Have you ever been in a romantic/sexual relationship with someone?  **Yes  No**

Are you currently in a romantic/sexual relationship with someone?  **Yes  No**

Current marital status:
- Single
- Married
- Divorced
- Widowed
- Separated

How many times have you been married?  ____

If you are in a relationship with someone, is that relationship monogamous, in other words, having only one sexual partner and no others?  **Yes  No**

Estimate how many different people you have had sex with in the last year.  ____

Estimate how many different people you have had sex with in your entire life.  ____

Are you a hemophiliac?  **Yes  No**

Have you ever had a blood transfusion?  **Yes  No**

    If **Yes**, was this prior to 1985?  **Yes  No**

How many blood transfusions have you had in your life?  ____

Have you ever been an IV (intravenous) drug user?  **Yes  No**

If you are an IV drug user, do you share used/dirty needles with other IV drug users?  **Yes  No**

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Have you ever participated in a safe-sex workshop or class before?  **Yes**  **No**

Have you ever tested for HIV or AIDS?  **Yes**  **No**

If **Yes**, what is your HIV status?  **Positive**  **Negative**

Do you have any mental illness, dementia, or cognitive disorder that you know of (i.e. schizophrenia, bipolar disorder, Alzheimer's syndrome, mental retardation, etc.)?  **Yes**  **No**
Appendix E

BOBOWICZ SEX INVENTORY (BSI)

Directions: As you know, a person can get the AIDS virus though sexual activity. These questions ask about your sexual practices. As these questions are asked, keep in mind that people practice many different kinds of sexual activities, and some people do things that others do not. Please answer all questions as accurately and honestly as possible by circling the appropriate response.

Please answer whether you have engaged in the particular behavior in the Past (before the last 6 months), if you currently engage in the particular behavior in the Present (within the last 6 months), and if you plan on or think you would ever engage in the particular behavior in the Future.

1. Do you perform oral sex upon your partner?
   | Past Behavior | YES | NO |
   | Present/Recent Behavior | YES | NO |
   | Future Behavior | YES | NO |

2. When with a partner, on what body part do you perform oral sex?
   PENIS?
   | Past Behavior | YES | NO |
   | Present/Recent Behavior | YES | NO |
   | Future Behavior | YES | NO |

   VAGINA/ CLITORIS?
   | Past Behavior | YES | NO |
   | Present/Recent Behavior | YES | NO |
   | Future Behavior | YES | NO |

3. If you perform oral sex upon your partner’s penis, do you swallow your partner’s ejaculate?
   | Past Behavior | YES | NO |
   | Present/Recent Behavior | YES | NO |
   | Future Behavior | YES | NO |
4. When performing oral sex upon your partner, do you use condoms or dental dams as a barrier between your mouth and your partner's genitals?

<table>
<thead>
<tr>
<th></th>
<th>Past Behavior</th>
<th>Present/Recent Behavior</th>
<th>Future Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YES</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>NO</strong></td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
</tbody>
</table>

5. Do you engage in vaginal intercourse (by "vaginal intercourse" we mean when a man puts his penis in a woman's vagina)?

<table>
<thead>
<tr>
<th></th>
<th>Past Behavior</th>
<th>Present/Recent Behavior</th>
<th>Future Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YES</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>NO</strong></td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
</tbody>
</table>

6. Do you engage in anal intercourse (by "anal intercourse" we mean when a man puts his penis in another person's anus or rectum)?

<table>
<thead>
<tr>
<th></th>
<th>Past Behavior</th>
<th>Present/Recent Behavior</th>
<th>Future Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YES</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>NO</strong></td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
</tbody>
</table>

7. If you engage in anal intercourse, do you receive the penis of your partner, or do you insert your penis into your partner?

<table>
<thead>
<tr>
<th></th>
<th>Past Behavior</th>
<th>Present/Recent Behavior</th>
<th>Future Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RECEIVE?</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>INSERT?</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>BOTH?</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

8. Do you use condoms every time you engage in intercourse (vaginal or anal)?

<table>
<thead>
<tr>
<th></th>
<th>Past Behavior</th>
<th>Present/Recent Behavior</th>
<th>Future Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YES</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>NO</strong></td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
</tbody>
</table>
### Scoring the BSI

Directions: Circle the responses that the subject made to the following item numbers, if they correspond to the responses given below. Add up the total number of circled responses in a section (high risk, moderate risk, past, present, and future) and multiply by the modifier that is provided for that section. Add the high risk and moderate totals for each time frame (past, present, future). The scores can range from 0 to 8 for each time frame total. Add Past, Present, and Future risk score totals for the Total Risk score (which can range from 0 to 24).

#### High risk sexual behaviors

<table>
<thead>
<tr>
<th>Past</th>
<th>Present</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>3)</td>
<td>Y</td>
<td>Y (mark 3 if 2 PENIS was Y)</td>
</tr>
<tr>
<td>8)</td>
<td>N</td>
<td>N (mark 8 only if 5/6 were Y)</td>
</tr>
</tbody>
</table>

Total circled times 2 = ______ = ______ = ______

#### Moderate risk sexual behaviors

<table>
<thead>
<tr>
<th>Past</th>
<th>Present</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>4)</td>
<td>N</td>
<td>N (mark 4 only if 1 was Y)</td>
</tr>
<tr>
<td>5 or 6</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>7)</td>
<td>Y</td>
<td>Y (mark 7 only if 5/6 were Y)</td>
</tr>
</tbody>
</table>

Total circled times 1 = ______ = ______ = ______

Past High Total  +  Past Mod Total  =  ______

Present High Total  +  Present Mod Total  =  ______

Future High Total  +  Future Mod Total  =  ______

Past Risk Score  =  ______

Present Risk Score  =  ______

Future Risk Score  =  ______

Total Risk Score  =  ______
Chapter VI
Dissertation

Abstract

The relationship between personality traits on the NEO-Five Factor Inventory (NEO-FFI) and sexual practices reported on the Bobowicz Sex Inventory (BSI) were investigated in an older adult sample (aged 60 and older). With research done by Eysenck and others, it appears that there is a relationship between personality traits and sexual behaviors that would put at one risk for acquiring HIV (1976). Little research has been conducted in this area with older adults while individuals over 50 make up 10 percent of the newly acquired HIV cases (Hinkle, 1991; Nocera, 1997; and Whipple and Scura, 1996). It was predicted that Neuroticism on the NEO-FFI would correlate negatively with risk for acquiring HIV on the BSI, while Extraversion, Openness to Experience, and Agreeableness would correlate positively with HIV Risk on the BSI. No significant results were found.
Older Adults’ Personality Traits and HIV Risk

No matter what an individual’s views and opinions are about older adult sexuality (which can range from support, to disbelief, to shock and avoidance of the issue), the fact is older adults continue to have enjoyable and active sex lives. With the increased longevity of the United States population, advances in health care and the treatment of sexual disorders, changes in marital status, and increased cultural openness to diversity in sexuality and sexual activities, older adults have more freedom and opportunity to maintain their involvement in sexual relationships late in life. However, with this freedom also comes an increased risk of acquiring HIV. The Centers for Disease Control and Prevention (CDC) have indicated that for all new HIV cases reported to the CDC, 10% of those have occurred in adults 50 years and older (Hinkle, 1991; Nocera, 1997; and Whipple and Scura, 1996). Hinkle, in her review of the literature, reports that of the HIV cases in adults over 65, 78% were acquired though blood transfusion. Since older adults were more likely than younger adults to need surgery it makes sense that the majority of HIV cases within this age group were acquired through this mode of transmission. However, almost a quarter of the new transmissions resulted from sexual contact or sharing of drug needles. Nocera described how most (65.8%) of these sexual transmissions were a result of
homosexual or bisexual intercourse between men. The Episcopal Society For Ministry on Aging, Inc. (ESMA; 1999) and the Centralina Area Agency on Aging (CAAA; 1999) both indicated higher rates of homosexual/bisexual transmission of HIV (66%), than of blood transfusion (though blood transfusion is still the second highest cause of transmission). Yet, while exact figures were not known, anecdotal evidence seemed to indicate an increase in sexual promiscuity among widowed and single older heterosexual men and women. Furthermore, both ESMA and CAAA indicated that it is heterosexual transmission that is growing at the fastest rate of all modes of HIV transmission. If most older adults do not know their HIV status, and with no need for birth control (particularly condoms) among postmenopausal women, many more heterosexual HIV transmissions might occur in the older adult population.

Personality and Human Sexual Behavior in Older Adults

The literature on human sexuality and personality to date focused on U.S. college students or young adults and there was almost no literature that includes older adult participants. Eysenck (1976) replicated his first study with college students extending the age of his sample to include older adults (427 males and 436 females between the ages of 18 and 60 years old, with an average age of 30 years). There was no indication in his report as to how many of those participants were 60 years old. However, he indicated that there was no change between the trends of
the college students and the adults in his second study. Given the paucity of literature on the sexual behaviors of older adults in relation to their personality traits, more research in this area is clearly needed. A brief review of the literature examining personality and sexual behavior in young adults follows.

**Personality and Human Sexual Behavior**

Eysenck's *Sex and Personality* (1976) is considered the classic study of the relationship between sexual behaviors, sexual attitudes, and personality traits. In this study, 423 male and 379 female college students (ages 18 to 22) were administered two self-report inventories under complete anonymity. The first inventory measured the students' sexual attitudes and their sexual behaviors with categories such as: sexual satisfaction, sexual excitement, sexual nervousness, premarital sex, homosexuality, and promiscuity. The second inventory measured the students' personality traits based on Eysenck's model of personality, which consists of three major dimensions: E (extraversion: outgoing and gregarious), N (neuroticism: anxiety, depression, and obsessive tendencies) and P (psychoticism: socially unacceptable thoughts and behaviors and an inability to control impulses). There was also an L (lie) dimension that acted as a validity scale for the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975).

Eysenck found that the scales on the questionnaires were intercorrelated. The results demonstrated a
relationship between personality types and particular sexual attitudes and behaviors. Eysenck indicated that high N scorers tended to have high feelings of guilt and low satisfaction regarding sexual activity. Those who scored high on the E scale tended to be less nervous and more promiscuous with sexual experiences than the low E scorer (introvert). Finally on the P dimension, high P scorers were characterized as feeling deprived of sexual contact; they were not satisfied with their sex lives. High P scorers felt hostility toward their sex partners and tended to suffer from "perverted" thoughts, which they did not wish to have.

Subsequent literature on Eysenck's EPQ with college students and young adults found that high E scorers generally were more satisfied with sexual activity and engaged in more varied sexual experiences (Eysenck, 1976; Barnes, Malamuth, & Check, 1984; and McCown, 1991). High N scorers generally engaged in less sexual activity (Eysenck, 1976; and Fontaine, 1994), and had a significant amount of anxiety and guilt associated with sexual experiences (Eysenck, 1976; Fontaine, 1994; McCown, 1991; and Murphy, Coleman, & Haynes, 1986). When they did engage in sexual activity it was usually not satisfying and may even delved into more deviant areas such as forced acts of sex (Eysenck, 1976; Barnes, Malamuth, & Check, 1984; and Murphy, Coleman, & Haynes, 1986).
Behavior

Through the research of individuals like Fiske (1949), Tupes and Christal (1961), Costa and McCrae (1985) and Digman (1988), there was increasing support for five factors to describe individual differences in human personality. The Five Factor Model (FFM; Digman, 1990, and Goldberg, 1993) of personality came about through decades of factor-analysis research into the words that are used to describe personality traits. These five factors or domains are essentially continua on which a person's personality exists. The factors/domains are characterized by the words that clustered together to form the factors. Costa and McCrae (1985) applied the following widely accepted labels to the five factors in their NEO Five-Factor Inventory (NEO-FFI; 1985): Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience.

Digman (1990) noted that Costa & McCrae demonstrated a significant relationship between Eysenck's model of personality and the FFM in that four of the five NEO-FFI factors were embedded within Eysenck's three factors. E and N were the same in both of the models; P in Eysenck's model correlated significantly with Costa & McCrae's factors of Agreeableness and Conscientiousness. Thus, the NEO-FFI will serve to replicate as well as to extend previous work using the EPQ.

To date, little research has been done with the NEO-FFI in regards to sexual behaviors. In 1997, Bobowicz...
conducted a study on the relationship between personality traits on the extended version of the NEO-FFI — NEO Personality Inventory - Revised (NEO-PI-R; Costa and McCrae, 1985) — and risk for acquiring HIV among college students. In that study, no significant relationship was detected between Extraversion and risky sexual behaviors. However, Neuroticism had a negative relationship with risk for acquiring HIV (high Neuroticism scorers engaged in less risky behaviors). Furthermore, significant positive relationships between the Openness to Experience and Agreeableness scales, and risk for acquiring HIV were detected. Therefore, even with some inconsistencies between prior findings using the EPQ and the results of Bobowicz' study, there appears to be a relationship between personality traits measured on the NEO scales and sexual behaviors linked to HIV risk.

As discussed previously little research exists on older adult sexuality and personality, or older adult personality and HIV risk. With older adults making up 10% of the recently acquired HIV cases and the projected increase in the older adult population (Hinkle, 1991; Nocera, 1997; and Whipple and Scura, 1996), there appears to be a need for research in this area. Therefore, this study attempted to measure the personality traits of older adults and how these traits related to their reported sexual behaviors. In addition, this study attempted to predict which individuals would be more likely to engage in
at-risk sexual behaviors for acquiring HIV so that they could be targeted for safe-sex education programs. Since no similar research has been done with older adults, research with young adults will be used to make predictions for this investigation. It is predicted that high N scorers will have lower HIV risk scores, due to their lack of engaging in sexual intercourse and their fears and anxiety towards engaging in risky sexual behaviors. Based on the research done with the E scale on the EPQ, it is predicted that E will have a positive relationship with reported HIV risk due to the frequency of sexual activity, and the greater variability in partners and sexual practices.

Since there was virtually no research examining the relationship between Openness to Experience (O), Agreeableness (A), and Conscientiousness (C) and human sexuality, the predictions made using these three scales are based on facets of the scales and Bobowicz’ (1997) research with college students. O is characterized by fantastic thoughts, an appreciation for aesthetics, and an appreciation for experiencing new sensations and feelings, and learning new things (Costa & McCrae, 1985). High O scorers will likely engage in unsafe sexual practices for the sensations and new experiences. A is characterized by trust, altruism and compliance (Costa & McCrae, 1985). High A scorers will likely engage in unsafe sexual practices out of a need to please or trust their partners’ requests. Thus it was hypothesized that N would correlate
negatively with HIV risk scores; and E, O, and A would correlate positively with HIV risk scores.
Method

Participants

For the purpose of this study, older adults will be defined as any individual 60 years of age or older. Asenath La Rue (1992) acknowledges the limitations in defining old age based on chronology, as biological markers of old age (physiological and psychological changes demonstrating gradual decompensation) can be found at various times in individual development depending on the person and his/her environmental conditions. However, some common language needs to be used and while Otto von Bismarck defined old age as 65 years for social security benefits, it is common for geriatric researchers to define old age at 60 years (La Rue, 1992).

The sample consisted of 26 male and 46 female older adults (between the ages 60 and 88 years, M=73.6 years old) from the Dayton area. Participants were recruited from local universities (22%), a Protestant church (18%), and a Roman Catholic church (60%), and included members of racial minorities (8% African-Americans and 10% Native-Americans). It needs to be recorded that the researcher is a member and employee of said Roman Catholic church. While 6 of the 43 participants from that church had a personal relationship with the researcher, due to the researcher’s position at that church, he has some rapport with the other 37 participants, as well. This rapport may have had an effect on participant responses and thus an effect on the results.
The majority of the participants were retired (89%) with an annual income between $20,000 - $40,000 (51%), high school graduates (71%, education range= 6th grade to graduate school, education Mean= 12.8 years) married (56%), and represented only two religious categories: Roman Catholic (60%) and Christian (40%). No participants identified themselves as homosexual or bisexual in orientation. However, 11% of the participants did not answer the question (possibly indicating non-heterosexual orientation). Members of the sample participated as volunteers. Any participants with a known or suspected dementia, cognitive impairment, or severe psychiatric disorder (i.e. schizophrenia, bipolar disorder, etc.) were excluded from this study. All participants were treated according to the "Ethical Principles of Psychologists and Code of Conduct" (American Psychological Association, 1992) and the Policies and Procedures of the Institutional Review Board of Xavier University (Xavier University, 1996). Thus, the informed consent of each participant was obtained prior to their participating in this study, and each participant was debriefed at the conclusion of the study.

Materials

NEO Five Factor Inventory (NEO-FFI; Costa & McCrae, 1985). To predict who was at greater risk for acquiring HIV, it was preferred that normal personality traits would be measured. The NEO-FFI is a brief Five-Factor personality measure designed to assess normal personality
traits, whereas other personality measures are designed with the purpose of measuring the personality traits of individuals with abnormal personalities and/or mental illness (such as the MMPI-2). Moreover, the NEO-FFI was normed on an older adult standardization sample making it a preferred instrument for this study.

The NEO-FFI measures personality using the Five-Factor model. The five domains of personality that the NEO-FFI measures are: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. The NEO-FFI consists of 60 5-point Likert scale items that can be completed in approximately 15 minutes. Raw scores on the domains are converted into T-scores (with a mean of 50 and a standard deviation of 10). The format of the NEO-FFI test form was slightly altered to reduce any possible confusion for the participants. Specifically, the position of the responses were moved so that they were located next to their corresponding question, and the print was enlarged to 14pt type to aid participants with decreased visual acuity.

Since the NEO-FFI is a shorter version of the NEO-PI-R, the reliability and validity of the NEO-PI-R will be addressed first. The normative sample for the NEO-PI-R consisted of 500 men and 500 women. Volunteers between the ages of 50 and 64 made up 19 percent of the sample, and volunteers who were 65 years of age and older made up 15.4 percent of the sample of men and 21 percent of
the sample of women. The domain scales have good internal consistency (average alpha = .73), test-retest reliability (test-retest coefficients range from .51 to .82), convergent validity (with 12 different personality scales yielding 66 out of 150 correlations greater than .50 in absolute magnitude), and construct validity (Costa & McCrae, 1985). Hogan (1989) commented in Buros Mental Measurement Yearbook on the good reliability and validity of the NEO-PI-R. He noted that some commendable aspects of the measure included norms using a non-clinical sample as well as good discriminant and convergent validity with the EPQ, the Guilford-Zimmerman Temperament Survey, and other standardized measures of personality.

With regard to the NEO-FFI, correlations between the NEO-FFI and the NEO-PI-R scales were .92, .90, .91, .77, and .87 for N, E, O, A, and C, respectively. Internal consistency scores for the NEO-FFI were .86, .77, .73, .68, and .81 for N, E, O, A, and C, respectively. Convergent correlation scores between the NEO-FFI and the NEO-PI-R ranged between .56 and .62 (all within acceptable levels), and none of the divergent correlation scores were above .20.

Bobowicz Sex Inventory (BSI; Bobowicz, 1997). To measure reported sexual practices related to HIV transmission, a new measure needed to be developed. At the time of Bobowicz’ research on safe sex practices of college students, no tests were available to measure a wide range
and variety of reported sexual behaviors associated with acquiring HIV. Therefore, the BSI was created as a measure of reported risky sexual practices.

One issue in the BSI’s development involved the definition of “safe-sex.” This measure used the recommendations for safe sex of the Gay Men’s Health Crisis (GMHC; Gay Men’s Health Crisis, Inc., 1991). Anything that is in opposition to what is recommended by the GMHC’s guidelines will be considered risky sexual behavior.

The BSI consisted of 8 Yes/No items that can be completed in approximately 10 minutes. In addition to the BSI questions, there were a variety of demographics questions for participants to disclose information on age, race, religious preference, sexual orientation, and current involvement in a sexual relationship. The questions were answered under the categories of Past Behaviors, Present/Recent Behaviors, and Future/Possible Behaviors. Certain questions indicated risky sexual behaviors based on the GMHC’s recommendations for safe sex practices. These questions comprise the Risk scale on the BSI (8 Yes-No items, range of scale score is from 0 to 24). The BSI was evaluated for face validity by 17 male and 12 female students and non-students. These individuals provided feedback on the test’s clarity, ease of comprehension, and accuracy of capturing relevant information. This feedback was then used to modify the BSI prior to its initial use. In a similar fashion, the BSI was piloted with a sample of
older adults (5 male, 7 female) to ensure comprehension. The scores from the pilot sample ranged from 0 to 8 with vaginal intercourse in the past and present without a condom being endorsed most frequently. A normative sample, while ideal, was not a possibility for Bobowicz due to practical obstacles for obtaining significant normative data. However, since the BSI is simply a checklist of endorsed sexual behaviors, it was believed that the BSI would gather the necessary data on reported sexual behaviors that would place an individual at risk for acquiring HIV. Bobowicz' study supported the BSI as a measure of reported risky sexual behaviors. However, additional research using this measure is needed.

Procedure

The participants were given the NEO-FFI, BSI, and a demographics questionnaire in 4 group testing sessions (ranging from 10 to 43 participants per session). Once all participants were present for a session, the examiner passed out the "Informed Consent" forms, explained the purpose of the study, and allowed the participants to read the Informed Consent forms and ask questions (questions asked dealt with the procedure, nothing on content). After the Informed Consent forms were signed and collected, the examiner passed out the research measures. It is common in psychological research to begin a battery of tests with a demographics questionnaire. Generally, demographics questionnaires are thought of as least anxiety provoking as
the questions often ask for descriptions about the participant’s known lifestyle. Therefore, the order of test administration for this study moved from what was believed to be least anxiety provoking (demographics questionnaire), to more anxiety provoking (NEO-FFI measuring psychological characteristics), to most anxiety provoking (BSI measuring possibly uncomfortable sexual content). Each participant’s test packet was assigned a number for the purpose of organization and anonymity, but in no way was this number associated with the participant’s signed Informed Consent form. Upon completion of the measures, all materials were returned to the examiner. Following completion and collection of the measures, participants were given a “Debriefing” form, and questions regarding the study were answered. The researcher for this study acted as the examiner in all four testing situations. Moreover, the researcher was present in the examination rooms while the participants completed filling out the measures. Most questions asked were practical in nature ("How much time will this take; do we have to answer all the questions; who gets this information?"). No significant questions were raised regarding the sexual content of the measures or the terminology.
Results

Data collected from the BSI was scored by giving participants one point for each "risky" activity in which he/she engaged, then multiplying the High Risk scores by two (giving them more weight), and adding the High Risk and Moderate Risk scores together. This was then calculated for behaviors done in the past, those the participants engage in currently, and any behaviors the participants expect to carry out in the future. The three totals (past, present, and future) were finally added together to yield a Total Risk score for the BSI. The participants' scores on the BSI ranged from 0 - 14 (maximum score of 24; 56% of respondents scored 4; 75% of respondents scored between 0-4) with a Mean of 4.39, and a Standard Deviation of 2.70. The majority of participants (56%) responded that they had vaginal intercourse without a condom, in the past, but were not currently engaged in sexual intercourse. Furthermore, only 6% of the participants endorsed any activities beyond vaginal intercourse and these activities were oral sex, without a condom or protective barrier, in the past, present, and future.

Collected data was analyzed using a combination of a bivariate correlation and a Multiple Regression. The bivariate correlation was used to analyze the relationship between Neuroticism on the NEO-FFI and the Total Risk score on the BSI. Multiple Regression was used to analyze the relationship between the three factors of Extraversion,
Openness to Experience, and Agreeableness with the Total Risk score on the BSI. It was assumed that the power of the correlations would be 0.80 with an effect size of 0.36 requiring a minimum sample of 60 participants. The data from 72 participants was collected.

Pre-screening analyses using bivariate correlations were conducted to explore the relationship between several demographic items and the Risk Scale on the BSI (see Table 1). The correlations between the BSI Risk Scale and income level, education level, ethnicity, and religion of the participants were all non-significant. However, marital status and Risk demonstrated a positive significant relationship ($r = .245, p < .05$). Those who are married are more likely to engage in reported risky sexual behaviors than those who are single or widowed. However, since there was little variance in the responses (75% scoring 4 or less on the BSI), it is difficult to say that the married participants are more likely to report engaging in risky sexual behavior than single or widowed participants. A more accurate interpretation is that married couples are engaging in more unprotected vaginal intercourse than single or widowed participants.

A step-wise regression was performed to remove the possible co-variance of marital status from the relationships between the NEO factors and the BSI. No significant results were found using this analysis. Whereas marital status was found to have a significant
relationship with the Risk Scale on the BSI ($F=4.487$, $p<.05$), the overall significance of the regression with the NEO factors and martial status removed was not significant ($F=1.472$, $p=.211$).

Neither of the two hypotheses were supported by the results. The first hypothesis predicted that Neuroticism (N) would correlate negatively with the Total Risk score on the BSI (incorporating past, present, and future activities) in a bivariate correlation. However, this did not occur and no significant relationship was discovered ($r = -.089$, $p=.457$).

The second hypothesis predicted that Extraversion (E), Openness to Experience (O), and Agreeableness (A) would have positive relationships with risk for acquiring HIV. This hypothesis was tested using a Multiple Regression between the NEO-FFI Factors (E, O, & A) and the Total Risk score on the BSI (incorporating past, present, and future activities). These three personality variables - E ($\beta=.035$, $p=.815$), O ($\beta=-.024$, $p=.870$), A ($\beta=-.178$, $p=.146$) - were not found to have a significant relationship with the Risk scale on the BSI ($R=.176$, $p=.541$).
Discussion

With regard to this current study, neither hypothesis was supported by the results. Yet, looking at the possible reasons for these results can provide the most useful information. Several possible explanations may have affected the results individually and/or collectively: fear, cohort effects, homogeneity of the sample, and sensitivity of the measures. Fear can be the most common influence in any study. Participants sometimes comment on how they worry about the way test results will be used as they may have a negative affect on the participant. Likewise, some areas of research are extremely difficult for participants to speak honestly about, even if the questionnaires are anonymous. In the case of this study, the participants were asked to complete an inventory revealing personal information on their sexual activity. Even though the participants did not provide their names on the Bobowicz Sex Inventory (BSI), the topic of sexuality is still anxiety provoking and may have resulted in less honest responding. It perhaps can be said that it is even more anxiety provoking for older adults who spent most of their lives viewing sex as a very intimate and private matter.
Moreover, while names were not included on the test materials, two other factors may have created some fear or discomfort in responding honestly for the participants: familiarity with the researcher and a detailed demographics questionnaire. As indicated in the Methods sections, 60% of the participants were recruited from a Roman Catholic church where the researcher is a full-time employee. Although only 6 of the 43 Roman Catholic church participants were known to have a personal relationship with the researcher, he is a visible figure in the church. This familiarity with him, by those participants, may have created an uncomfortable situation for honest responding. What might have added to any possible fear, due to this familiarity with the researcher, is the fact that the demographics questionnaire was quite extensive in gathering descriptive information on the participants. While this information in itself is usually innocuous (income level, occupation, education level, race, religion, etc.), for anyone who has a distinct demographic profile it can be quite identifying. In other words, hypothetically speaking if a participant identifies himself as a man, Roman Catholic, making in excess of $60,000 a year, with a doctoral level education, and is a retired professor, then it may be easy to identify who this person is, especially
if only one such person exists at this Roman Catholic church. While the researcher would never analyze the data looking to identify who the responses were affiliated with, that does not prevent a participant from believing it would happen. The possibility of being identified from a detailed demographics questionnaire and familiarity with the researcher may have contributed to the fear factor.

Cohort effects can also be an influencing factor in the results of this study. The research shows that 10% of all new HIV cases are in those 50 and older (Hinkle, 1991; Nocera, 1997; and Whipple and Scura, 1996). However, as age increases, the number of new HIV cases decreases. And the new HIV cases in those 65 and older tend to come from surgery and blood transfusions. Thus, as a whole, those 65 years of age and older may not be engaging in activities placing them at risk which is consistent with the low scores on the BSI in this study. The earlier study with the BSI (Bobowicz, 1997) found a significant relationship between personality traits and questions regarding HIV risk in a younger cohort (mean age 20 years old). In the future, one might find that as younger adults mature the relationship between personality traits and HIV risk may increase in older adult samples. Thus, the lack of a significant relationship with the results of this study may
be due to the fact that within this current population of older adults (based only on this study’s sample of older adults), there may be little sexual variability and the group, as a whole, might be quite homogenous sexually. Furthermore, the current population of older adults may have quite a significant amount of sexual variability, but this sample may have been quite homogenous. After all, the participants were recruited from several University Older Adult Learning Centers, and several local churches in the Dayton, Ohio area. Perhaps there was homogeneity in responses regarding sexual activities because the sample was homogenous in their experiences or acculturation. A more diverse sample may have yielded different responses.

The final possible influence on the results that will be discussed is the sensitivity of the measures. While Bobowicz (1997) found significant results in using the BSI with a sample of college students, it may not have been appropriate with an older adult sample. The wording of the questions or perhaps the content may not have addressed the sexual risks that older adults face; anal intercourse and oral sex may not be an issue for elders, but multiple partners for the single or widowed might be. Moreover, the older adult sample may not have been familiar with some of the terms incorporated into the questions (i.e. clitoris,
ejaculate). Even though the BSI was piloted with older adults for face validity, again, homogeneity of the pilot sample could have given inaccurate feedback on how comprehensible the BSI is for a general sample of older adults. While this researcher would have liked to have standardized the BSI, due to practical limitations it was not possible at this time. To have a measure standardized it takes extensive time, money, and human-power to get a sample that represents most of the population of the United States based on ethnic origin, race, age, socio-economic status, and geographic location. These were not available to this researcher. However, if the BSI is going to be used further in research or practice, standardization will be necessary.

Conclusion

Prior research found a relationship between personality traits and reported sexual behaviors in young adults. However, in an older adult sample a relationship between personality and reported sexual behaviors related to risk for acquiring HIV was not demonstrated. As discussed, several factors may contribute to the lack of significant findings: fear, cohort effects, homogeneity of the sample, and sensitivity of the BSI.
This study was only a beginning. HIV and AIDS have not been cured and are still infecting individuals at an alarming rate. The best current defense against HIV is prevention. However, prevention methods do not work universally with every person. Knowing the relationship between personality and HIV risk may help in developing improved preventative methods that target particular audiences. Then, even if we never find a cure, we may at least affect a devastating blow to this terrible plague.

Older adults are not immune to HIV. However, many think that they are or that they are too old for it to matter. Accurate knowledge of HIV in older adults needs to be made readily available. Not only should future research continue to look at the relationship between HIV risk and personality in older adults, but also how personality may determine the most appropriate way to teach HIV prevention strategies to an older adult audience. Furthermore, research looking at the relationship between safe-sex knowledge and HIV risk, as well as personality types and safe-sex knowledge, with older adult samples would be useful in determining how effective current HIV prevention programs are and what could be done to improve them. While creative methods for preventing HIV transmission can be contrived, such as chemical restraints, serious ethical and
legal issues would be raised for anything that would reduce a person's autonomy and freedom to make choices. At this point knowledge seems to be the best way of preventing HIV transmission. Perhaps HIV prevention programs need to broaden the focus from teens and young adults to include educating all those who can possibly be affected by HIV, even older adults.
References


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Table 1

Pearson Correlations Between Demographic Items and Risk Scale on the BSI

<table>
<thead>
<tr>
<th>Demographic Item</th>
<th>Risk Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income Level</td>
<td>.029</td>
</tr>
<tr>
<td>Marital Status</td>
<td>.245*</td>
</tr>
<tr>
<td>Education Level</td>
<td>.131</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-.225</td>
</tr>
<tr>
<td>Religion</td>
<td>-.035</td>
</tr>
</tbody>
</table>

* = $p < .05$. 

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