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# Differentiating Theists and Nontheists by way of a Sampling of Self-Reported Sexual Thoughts and Behaviors

Kelli Callahan  
*Walden University*

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# Walden University

College of Social and Behavioral Sciences

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Kelli K. Callahan

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Walden University  
2018

Abstract

Differentiating Theists and Nontheists by way of a  
Sampling of Self-Reported Sexual Thoughts and Behaviors

by

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MFS, National University, 1998

BA, Boise State University, 1995

BS, Boise State University, 1993

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Psychology

Walden University

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## Abstract

Numerous researchers have addressed the impact of individual religiosity or spirituality on psychological well-being. However, studies addressing the possible relationship between religiosity and sexuality, specifically in the form of deterrence of certain sexual thoughts or behaviors based upon religious dictates, remain sparse. Individual religiosity may be related to individual sexual self-expression. Built on the framework of cognitive-dissonance theory and self-determination theory, this quantitative, correlational study was designed to examine the relationships between religiosity and sexual attitudes and behaviors of both theist and nontheist population samples comprised of approximately 400 subjects throughout the United States. Study participants completed the Derogatis Sexual Functioning Inventory in addition to a demographic questionnaire designed specifically for the research. A 2-step hierarchical binary logistic regression was performed to address the research questions for this study. Significance was found in the regression model for 3 selected variables--age, drive, and fantasy; research questions 1 and 2 were supported with the model findings. The results also offered support for the 2 aforementioned theoretical frameworks selected for this study. The implications for positive social change include a clearer understanding of the possible relationship between religiosity and sexuality and any differences in sexual behaviors between theists and nontheists. These implications are important in that the findings may result in healthier sex lives for individuals, increased communication among couples, enhanced acceptance of different sexual orientations, and decreased cognitive dissonance among those individuals contemplating or struggling with sexual behaviors that negate the teachings of their religious tenets.

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## Dedication

This research project is dedicated to Jane, Diane, Edmund, Rosalind, Alfred, Marie, Virginia, and Stephen. Thank you for the invaluable knowledge, lessons, and life mentorship.

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I would like to acknowledge my dissertation committee members, most notably Dr. Tracey Mallett (chair) and Dr. Tom Diebold for their guidance and patience throughout this project. I would also like to acknowledge my family and friends for their ongoing support, cheerleading, and continual encouragement during this endeavor. I genuinely appreciate your patience despite my repeated declines of various social engagements in order to devote time to this research project.

*“It is paradoxical, yet true, to say, that the more we know, the more ignorant we become in the absolute sense, for it is only through enlightenment that we become conscious of our limitations. Precisely one of the most gratifying results of intellectual evolution is the continuous opening up of new and greater prospects.”*

- Nikola Tesla

## Table of Contents

List of Tables .....	vi
Chapter 1: Introduction to the Study.....	1
Overview.....	1
Background.....	2
Problem Statement.....	5
Purpose of the Study.....	8
Research Questions and Hypotheses .....	9
Theoretical Framework.....	10
Nature of the Study.....	11
Definition of Terms.....	12
Assumptions.....	14
Scope and Delimitations .....	14
Limitations .....	15
Significance.....	16
Ethical Considerations .....	18
Summary.....	18
Chapter 2: Literature Review.....	20
Literature Search Strategy and Theoretical Foundation .....	20
Theoretical Framework.....	22
Background.....	23
Contemporary Trends .....	24
Sexual Restrictions.....	26



Intrinsic and Extrinsic Religiosity .....	32
Spirituality.....	33
Religiosity, Ethnicity, and Culture.....	35
Religious Fundamentalism.....	39
Benevolent Versus Aggressive Deities .....	41
Religiosity .....	42
Sexual Behaviors .....	42
Psychology .....	45
Social Implications.....	48
Coping Mechanism .....	53
Sexuality and Guilt .....	55
Homosexuality .....	56
Compensatory Mechanism.....	57
High-Risk Sexual Behavior .....	58
Religiosity, Sexuality, and Gender Differences.....	62
Adolescent Sexuality .....	66
Religiosity .....	66
Substance Abuse .....	68
Contraception .....	70
Sexual Practices .....	78
Church-Member Populations .....	80
Married Populations.....	81
Celibacy and Contraception .....	83

Shaming .....	85
Nonreligious Populations.....	86
Religiosity, Contraception, and Abortion .....	87
Sexual Risk Taking and Fantasy.....	89
Religious Paradigm Shifts.....	94
Summary and Conclusions .....	98
Chapter 3: Research Method.....	104
Overview.....	104
Research Design and Rationale .....	106
Methodology .....	107
Population .....	107
Sampling Procedures .....	108
Data Collection .....	108
Instrumentation and Operationalization of Constructs .....	109
Predictor Variables.....	111
Control and Criterion Variables.....	113
Data Analysis .....	115
Threats to Validity .....	116
Ethical Procedures .....	117
Summary .....	119
Chapter 4: Results .....	120
Introduction.....	120
Research Question 1 .....	121

Null Hypothesis 1 .....	121
Alternative Hypothesis 1.....	121
Research Question 2 .....	121
Null Hypothesis 2 .....	121
Alternative Hypothesis 2.....	121
Research Question 3 .....	122
Data Collection .....	122
Population and Descriptive Findings .....	122
Instrumentation .....	125
Internal Consistency Reliability of Instrumentation with the Sample .....	125
Results .....	128
Assumptions.....	128
Correlational Analyses.....	129
Hierarchical Regression Model.....	133
Hypothesis Testing.....	136
Findings as Relates to Research Question 1 .....	137
Research Question 1 .....	137
Null Hypothesis 1 .....	137
Alternative Hypothesis 1.....	137
Findings as Relates to Research Question 2 .....	138
Research Question 2 .....	138
Null Hypothesis 2 .....	138
Alternative Hypothesis 2.....	138

Findings Related to Research Question 3 .....	138
Research Question 3 .....	138
Summary .....	139
Chapter 5: Discussion, Conclusions, and Recommendations.....	141
Introduction.....	141
Interpretation of the Findings.....	141
Research Question 1 .....	141
Research Question 2 .....	142
Research Question 3 .....	143
Theoretical Framework.....	145
Limitations of the Study.....	147
Internal Validity .....	147
External Validity.....	149
Recommendations for Future Research .....	150
Implications for Positive Social Change.....	153
Conclusion .....	156
References.....	157
Appendix A: Demographic Questionnaire.....	219
Appendix B: Derogatis Sexual Functioning Inventory (DSFI) .....	220

List of Tables

Table 1. Frequency Counts and Percentages of Categorical Control Variables .....124

Table 2. Measures of Central Tendency and Cronbach’s Alpha Coefficients for Variable  
Constructs of the DSFI .....127

Table 3. Correlations for Bi-Variate Relationships of Variables Included in the  
Hierarchical Logistic Regression Model .....131

Table 4. Hierarchical Logistic Regression of Theism Regressed on Covariates and  
Independent Predictor Variables .....136

## Chapter 1: Introduction to the Study

### Overview

Historically, religion has played a key role in sexuality and, more specifically, sexual restriction (Balon, 2008; Hart & Wellings, 2002; Hodge, 2005; Whitehead & Baker, 2012). For example, the majority of the Abrahamic religions (Christianity, Islam, and Judaism) make a concerted effort to control the sexuality of individuals (Miracle, Miracle, & Baumeister, 2003). An important topic for psychological researchers to consider is the extent to which religious teachings and practices influence human sexuality. In this study, I explored the topic as it relates to a healthy sexual-maturation process. The topic is important from a research perspective because it is beneficial to understand the degree to which religious influences contribute to sexual behaviors and attitudes toward sexuality, which in turn, impact psychosexual development.

Determining the possible etiology of maladaptive sexual practices potentially sourced in religious influences is also critical for increased understanding of the genesis of certain sexual behaviors. These include deviant or criminal sexual behaviors. The findings from this study may possibly add to the existing body of knowledge for use by the mental health profession to help promote increased sexual health among individuals and couples. Improved sexual health, in turn, may decrease the maladaptive degree or extent of cognitive dissonance among individuals, thereby allowing them to embrace their sexualities. This may be particularly beneficial for youth who may be struggling with their sexual orientation.

Increased understanding of the relationship between religiosity and sexual attitudes and behaviors is beneficial in promoting the acceptance of various forms of human sexuality. Such knowledge can result in healthier sex lives for individuals, increased communication among couples, enhanced acceptance of different sexual orientations, and a decreased degree of cognitive dissonance among those struggling with sexual behaviors that run counter to the religious teachings of their upbringing or their current religious practices. I designed this study to examine participants' attitudes toward sexuality, their engagement in sexual behaviors, and the extent to which religiosity dictates their participation or nonparticipation in such behaviors. I also addressed the possible presence of cognitive incongruence as a result of participation in unorthodox sexual behaviors contradicting the tenets of a respective religious affiliation.

This study's potential for positive social change involves enhanced understanding of the relationship between religiosity and sexuality and the differences between the sexual behaviors of theists and nontheists including sexual experience, drive, information, attitude, fantasy, and satisfaction. Such knowledge holds tremendous research value. By understanding the relationship between religiosity and sexual behaviors, researchers may better understand whether religiosity enhances or socially stunts sexual self-expression. This could, in turn, play a role in the overall psychological health for individuals in addition to couples.

### **Background**

The study of religiosity and its intersection with psychology has a long, rich history, both in the realm of American research and the global research community. Early

studies on religious conversion were conducted during the 1900s by Starbuck (1987b), Hall (1904), and Leuba (1912), in addition to the classical works of William James (1902). These researchers investigated the potential relationship between religious experiences and behavioral changes including sexual behavior (Sandage, Moe, Pargament, Exline, & Jones, 2013; Woody, 2003).

Restrictive religious doctrines are integral to a variety of sects and denominations of several of the world's religions including Christianity, Judaism, Islam, and Hinduism. Various evangelical and fundamentalist groups practice such doctrines with particular vigor and commonly blame those deviating from the prescribed sexual pathway, as dictated in existing religious texts, for the course of many societal ills including natural and man-made disasters (Walworth, 2001). Each of the aforementioned groups imposes strict rules for its followers that relate to sexual behaviors and attitudes toward such behaviors.

Research specifically relating to human sexuality and religiosity from a historical perspective is somewhat sparse however recent studies have shown a strong correlation between religiosity and both expressed sexual behaviors and attitudes toward sexuality (Ray, 2012). When religion and psychology support variant approaches to sexuality, the resulting incongruence serves as a rich field for studying the development of maladaptive coping strategies.

Given the extremely high degree of religious pluralism throughout the world, individuals commonly struggle with development of a belief system associated with sexual behaviors. This includes sexual behaviors that are acceptable within the religious



context to which the respective individuals subscribe. With conflicting societal norms, particularly with regard to human sexuality, religious doctrine can lose credibility. As is evident in Western cultures, a pronounced tension exists between the elements of sexual expression and sexual restraint. While American culture, for example, tends to demonstrate increased tolerance for certain previously prohibited sexual behaviors such as premarital sex or homosexuality, the American political system continues to lean toward a more conservative ideology. This manifests in the form of various abstinence-only programs and in the defunding and cessation of family-planning services (Carroll, 2005; Miracle et al., 2003).

The resulting societal and cultural norms produced as a result of the integration of religion and sex has long dominated human history; yet, both are commonly researched as separate, distinct phenomena (Foucault, 1978; Nelson, 2012). Minimal research exists on the intersection between religiosity and sexual attitudes and behaviors. In this study, I explored how definitions of sexual morality are often dictated by underlying religious frameworks. This study of the relationship between religiosity and sexuality may contribute to knowledge regarding the encouragement or deterrence of certain sexual practices. Additionally, it may contribute knowledge to the genesis of sexually based attitudes and expressed sexual behaviors within a religious framework. Such research is necessary for enhancing human sexuality and increasing the degree of understanding and tolerance among people. Ideally, the research could contribute to creation of a culture in which sexuality is not viewed as abhorrent or deviant, but rather as something that serves as a broad and evolutionary reflection of the individual.

### **Problem Statement**

Human sexuality has long been regulated by religious doctrine. Early researchers reported that religiosity has served as a predictable variable in terms of sexual attitudes and expressed sexual behaviors (Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gerbhard, 1953). The majority of investigators have focused on the role of religion as a mediating factor in sexual fantasy, frequency, and satisfaction rates among populations professing membership in organized religious groups (Michaels, 1956; Pluhar, Frongillo, Stycos, & Dempser-McClain, 1998; Thornton & Camburn, 1989). Related research has progressed over the years to differentiate between religiosity and spirituality as they relate to sexuality. Yet, few studies have been conducted to further address the sexual behavior and sexual risk taking of atheists, agnostics, and/or self-professed “free thinkers” who do not subscribe to traditional religious mind-sets.

In this research, I evaluated and compared the possible cognitive dissonance between the religious beliefs and sexual self-expression of self-professed religious individuals (i.e., theists) to that of atheists and agnostics (i.e., nontheists). I also investigated whether the presence of guilt, introduced by the indoctrination of religious ideologies, stunts sexual self-expression and the associated sexual satisfaction. Such knowledge is relevant for recognizing the incongruence between attitudes toward sexuality and manifested sexual behaviors, the variance of which may be extreme in some cases. As I noted earlier, many world religions, including the three Abrahamic faiths, discourage acting out on sexual impulses (Barlow & Akbarzadeh, 2006; Cowden & Bradshaw, 2007; Niaz, 2003). Rather, they impose strict, often codified restrictions on

sexual impulses. The paradox then begs the question of whether this regulation of sexuality by religious establishments ultimately has the opposite effect, increasing individuals' obsession or preoccupation with sexuality.

A pedophilic Catholic priest who accrues young sexual assault victims, or a young Muslim student who engages in secretive and forbidden premarital sex with numerous partners, are both examples of individuals who raise questions regarding the effects of the religious restriction of sexual expression. Another example involves the examination of sexual behaviors and religiosity by way of geography. For example, the so-called "Bible belt" of the United States is composed of a band of states bordered by Texas and Florida in the south, and Missouri and Virginia in the north. The U.S. Census Bureau (2010) reported this region as having the highest rate of religiosity, with approximately three fourths of the residents identifying with an established religious denomination. Researchers have also found that this area of the nation has the highest rate of Web searches for pornographic content, as well as the highest rate of homemade pornographic videos (MacInnis & Hodson, 2015). Additionally, the U.S. Bible belt has the highest teen pregnancy rate in the nation (Strayhorn & Strayhorn, 2009; Vazsonyi & Jenkins, 2010), as well as the highest incidence of sexually transmitted infections (Satterwhite et al., 2013) and human immunodeficiency virus (HIV; Centers for Disease Control and Prevention, 2011). Researchers have also explored the relationship between the legalization of gay marriage and subscriptions to online pornography sites (Edelman, 2009). These studies have shown that the Bible belt states that banned gay marriage have

an 11% higher rate of online-pornography subscriptions than states outside of the Bible belt where gay marriage had been legalized.

A pivotal question with vast research potential for the psychological community is why strict religious restrictions on sexual thoughts and behaviors seem to result in effects opposite of their intent. The fundamental paradox is analogous to the white bear phenomenon commonly noted in psychological studies. To instruct an individual not to think about a white bear typically results in obsessive thoughts regarding white bears. This phenomenon was introduced by Wegner, Schneider, Carter, and White (1987) in research involving a series of experiments. Participants were instructed not to think about a white bear for a period of 5 minutes. As hypothesized, the more the participants attempted to refrain from thinking about the white bear, the more they thought about the white bear. Wegner et al. subsequently labeled this effect the *ironic rebound*, which contributed to establishing theory addressing the suppression of thoughts and the tendency toward a subsequent opposite effect. Consequently, such suppression is ineffective and can lead to behavior rebound. According to Wegner et al., “The paradoxical effect of thought suppression is that it produces a preoccupation with the suppressed thought” (p. 8). Contemporary researchers now know that the ironic rebound effect helps to explain various psychological problems including depression (Dalgleish, Yiend, Schweizer, & Dunn, 2009; John & Gross, 2004), a myriad of anxiety disorders (Campbell-Sills, Barlow, Brown, & Hofmann, 2006), and mood disorders (Borton, Markovitz, & Dieterich, 2005; Winerman, 2011).

Social scientists have long been interested in how cultural characteristics and social structural variables contribute to the formation of behavior. Because religion holds the potential to influence human behavior, understanding how religiosity impacts sexual attitudes, thoughts, and behaviors is important to understanding the relationship between religiosity and sexual behaviors. Understanding whether religiosity enhances or stunts sexual self-expression may, in turn, play a role in not only overall psychological health of the population, but also social acceptance in the respective culture.

### **Purpose of the Study**

The purpose of this quantitative study was to examine the relationship between religiosity and sexual attitudes and behaviors among both theist and nontheist population samples. I designed the research to examine participants' attitudes toward sexuality, in addition to their engagement in sexual behaviors and the extent to which religiosity dictates participation or nonparticipation. I also investigated the possible cognitive incongruence between sexual behaviors and the religious tenets of the respective participants. My objective was to create positive social change through understanding the relationship between religiosity and sexuality and to promote a healthier recognition of, and congruence between, sexual thoughts and behaviors. This is also important for promoting a greater understanding and awareness of factors constituting positive sexual health.

The independent variables of the study were sexual attitudes and behaviors. The dependent variable was the presence or absence of theism. Covariate measures included include age, gender, ethnicity, and education level.

## Research Questions and Hypotheses

The following research questions and corresponding hypotheses guided this study:

*RQ1:* In a binary logistic regression, to what extent are theists and nontheists correctly differentiated by sexual functioning subscale scores of sexual experience, drive, attitude, information, fantasy, and satisfaction?

*H<sub>01</sub>:* In a binary logistic regression, sexual experience, drive, attitude, information, fantasy, and satisfaction subscale scores will not be statistically significantly better than the constant only model in correctly differentiating theists and nontheists.

*H<sub>11</sub>:* In a binary logistic regression, sexual experience, drive, attitude, information, fantasy, and satisfaction subscale scores will be statistically significantly better than the constant only model in correctly differentiating theists and nontheists.

*RQ2:* To what extent does a set of demographic variables (age, gender, religious affiliation, marital status, ethnicity, and education level) improve the differentiation of theists and non-theists after controlling for the multi-dimensional sexual functioning subscale scores?

*H<sub>02</sub>:* In a hierarchical binary logistic regression, the block effect of the set of demographic variables will not be statistically significant.

*H<sub>12</sub>:* In a hierarchical binary logistic regression, the block effect of the set of demographic variables will be statistically significant.

*RQ3:* What is the best model of sexual functioning subscale scores and demographic variables for correctly differentiating theists and nontheists?

## Theoretical Framework

Cognitive-dissonance theory (CDT) holds that individuals continually strive for congruence between thoughts and behaviors (Festinger, 1957). Because dissonance ultimately leads to varying degrees of mental discomfort, incongruence between religious thoughts and expressed sexual behaviors may lead to rationalizing religious beliefs or sexual behaviors in an effort to reduce the dissonance. Researchers have further suggested that attachment theory supports the abeyance of religious ideologies (Flannelly & Galek, 2009).

Self-determination theory (SDT) is a well-supported motivation meta-theory that facilitates determination of the underlying causality of motivation (Deci & Ryan, 1987; Guerin, Bales, Sweet, & Fortier, 2012). In a research context, SDT uses empirically based methods while simultaneously applying an organismic meta-theory. The purpose is to support the identification and clearer understanding of behavioral self-regulation and the development and evolution of personality (Ryan, Kuhl, & Deci, 1997; Sheldon & Schuler, 2011). In a historical context, much of the existing research grounded in SDT includes analyses of the motivating factors of behavior while simultaneously examining environmental variables as potential aggravating factors (Deci & Ryan, 2000; Soenens et al., 2012). Aggravating factors can undermine well-being and social functioning.

CDT and SDT represent the two primary constructs that I used to understand variances in motivational aspects of expressed behaviors (see Deci & Ryan, 2000; Soenens et al., 2012). A harmonic congruence between attitudes and behaviors, and an avoidance of disharmony or dissonance, serves as the theoretical basis for CDT. Many

researchers have found that homeostasis between attitudes and behaviors is correlated with an improved mental state (Acharya, Blackwell, & Sen, 2015; Aronson, 2004; Breslavs, 2013). SDT serves as a broad macrotheory of human motivation and addresses issues such as self-regulation, universal psychological needs, behavior, and well-being (Deci & Ryan, 1985, 2008). Both theories address the relationship between attitudes and cognitive processes in addition to subsequent expressed behaviors like those that I addressed in this research study.

I tested Hypothesis 1 using the second level of hierarchical logistic regression of survey results pertaining to the relationship between theism and sexual self-expression and behaviors, which I measured using the Information and Sexual Experience subscales of the Derogatis Sexual Functioning Inventory (DSFI). Hypothesis 2 was tested using the second level of hierarchical logistic regression of survey results pertaining to the relationship between theism and attitudes toward sexuality and sexual behaviors, which were measured through the Sexual Attitude, Fantasy, Satisfaction, and Drive subscales of the DSFI. Using theoretical frameworks of CDT and SDT, I thus attempted to determine the relationship between theism and sexual self-expression and behaviors in addition to attitudes towards sexual behaviors and sexual attitudes.

### **Nature of the Study**

For this quantitative, cross-sectional, correlational study, I used a survey research strategy. A quantitative correlational design facilitates examination of potential relationships between variables (Bernard, 2006; Cooper & Schindler, 2006; Creswell, 2009; Johnson & Christensen, 2007). I examined any differences between theists and



nontheists, in terms of sexual self-expression and attitudes toward sexuality and sexual behaviors. I also measured the sexual self-expression and behaviors of the participants, as well as their attitudes toward sexuality and sexual behaviors.

The independent variables in this study were sexual attitudes and behaviors. The dependent variable was the presence or absence of theism, and covariate measures included age, gender, ethnicity, and education level. Investigators use survey research when seeking to provide a quantitative description of the attitudes and opinions of a sample population (Creswell, 2009). Participants in this study completed the instruments administered in this study in an electronic online form. I measured 10 variables, including six predictor variables and four measured control variables.

### **Definition of Terms**

*Active religiousness:* Externalized organizational participation in religious activities (Sullins, 2006).

*Affective religiousness:* Internal or individual beliefs of a spiritual nature such as the personal, internalized belief in a deity (Sullins, 2006).

*Agnosticism:* Coined by the famous biologist Thomas Huxley in 1869 (as cited in Smith, McCullough, & Poll, 2003), this term represents the impossibility of knowledge in a given area (Bell & Taylor, 2014; Huxley, 1894).

*Atheist:* An individual who does not believe in a deity or any form of higher power (Gervais, Shariff, & Norenzayan, 2011). The “a” of the term designates *without*; therefore, atheism denotes a lack of theism.

*Faith:* Often expressed as a colloquialism for maintaining a strong belief in something or someone (Dyess, 2011). In a spiritual or religious sense, the term is often expressed as a commitment to a universal entity or entities and their respective teachings (Dyess, 2011; Walker, 2010).

*Religion:* In its broadest definition, this term refers to the beliefs, behaviors, and formal institutions that revolve around the acceptance of a supernatural entity or entities (Bruce, 2011).

*Religiosity:* Individual commitment toward the traditionally held beliefs of a religion and religious practices (Bryant-Davis & Wong, 2013; Good & Willoughby, 2008; Holdcroft, 2006; Shafranske & Malony, 1990).

*Sexual health:* A reflection of the intellectual, emotional, somatic, and social aspects of comprehensive sexual well-being in a manner that is personally enriching and that promotes healthy communication, personality, and love (World Health Organization, 1975). A respectful approach to sexuality that is free from discrimination, coercion, or violence (World Health Organization, 2006).

*Sexual well-being:* The holistic perceived self-evaluation of personal sex life, sexuality, and a sexual relationship (Laumann et al., 2006; Oberg, Fugl-Meyer, & Fugl-Meyer, 2002).

*Spirituality:* A personal relationship with a higher power or an internal search for the sacred (Hill & Pargament, 2008; Vieten et al., 2013, Zinnbauer et al., 1997). A unique internal orientation toward a transcendent reality (Dy-Liacco, Piedmont, Murray-Swank, Roderson, & Sherman, 2009).

*Theism*: The belief in a deity or deities. Monotheism represents belief in one omnipotent deity, whereas polytheism represents a belief in one or more deities (Beck & Taylor, 2008).

### **Assumptions**

I collected data for this study using self-report questionnaires. Therefore, I assumed that the study participants were forthright and honest in their responses to all survey questions. A demographic questionnaire designed specifically for the study was administered to collect the age, gender, ethnicity, and education level of each participant and whether the respondent was a theist. I maintained the anonymity and confidentiality of all study participants.

All study participants also had the option to voluntarily withdraw from the study at any time. Because Christianity represents the largest religious orientation in the world (Pew Research Center, 2012a), one of my underlying assumptions was that the majority of the participants would identify as a member of this religious group. I administered the survey to participants in the United States; hence, I assumed that the religious affiliation for the majority of the population sample would be Christianity-based.

### **Scope and Delimitations**

In this study, I sought to explore the relationship, if any, between religiosity, spirituality, sexual satisfaction, and attitudes toward sexuality and sexual self-expression. The study participants were adult subjects recruited through SurveyMonkey, a large, Web-based survey company. The sample included adults who self-identified as nontheists or theists who were members of organized religions. Study participants were

18 years of age or older who were currently residing in the United States. This wide scope allowed access to the number of potential participants needed to power the study.

This research project was unique in that I collected data on sexual self-expression and attitudes toward sexuality from both theists and nontheists, the latter of which are grossly underrepresented in related literature. The findings of the study may provide invaluable insight into the possible correlation between religion and sexuality, inclusive of expressed sexual behaviors leading to sexual satisfaction. In Chapter 4, I reported possible differences in sexual experience, drive, information, attitude, fantasy, and satisfaction between theists and nontheists.

### **Limitations**

I provided all study participants assurance of complete anonymity. As a result, I assumed that the participants would have no valid incentive to provide anything but fully honest and transparent responses. Those subjects who tend to adhere to a more polar orientation on the religiosity spectrum (e.g., very religious or not religious at all) may have been more prone to participate in the survey. The study was further limited by elements common to research-based, self-reported data. For example, social desirability could lead study participants to report variations in their sexual behaviors, particularly in reference to perceived normalcy, as it relates to sexual behaviors. Social desirability suggests that the majority of individuals present with the natural internal motivation to represent themselves in a favorable social light, thus demonstrating greater adherence to the prevailing social norms (King & Bruner, 2000).

### **Significance**

The positive social change implications of this study included a clearer understanding of the possible role between religiosity and sexuality, as well as whether differences existed between theists and nontheists in term of sexual behaviors including sexual experience, drive, information, attitude, fantasy, and satisfaction. This knowledge could subsequently present tremendous research value. By understanding the relationship between religiosity and sexual behaviors, researchers may better understand whether religiosity enhances or socially stunts sexual self-expression. Such expression, in turn, may play a role in overall psychological health, demonstrating a congruence between expressed behaviors and cognitive thought processes (Deci & Ryan, 2000; Soenens et al., 2012).

The knowledge gained from this study may also hold tremendous value in terms of promoting positive sexual health among people, couples, and decreasing the maladaptive degree or extent of cognitive dissonance among individuals. Individuals may be empowered to come to terms with their developing sexuality, which may be particularly beneficial for youth struggling with their sexual orientation. Healthy sexual attitudes and behaviors may promote improved health—both physically and psychologically—because they are linked to lower stress levels (Burleson, Trevathan, & Todd, 2007; Hamilton, Rellini, & Meston, 2008; Lee, Macbeth, Pagani, & Young, 2009); reduced blood pressure (Grewen & Light, 2011; Svetkey et al., 2005); improved cognitive functioning (Ahlskog, Geda, Graff-Radford, & Peterson, 2011; Hartmans, Comijs, & Jonker, 2014; Huppert, 2008); improved immune-system functioning

(Segerstrom & Miller, 2004); and reduction of risk for certain types of cancers, such as prostate cancer (Hyde et al., 2010; Leitzmann, Platz, Stampfer, Willett, & Giovannucci, 2004); self-esteem is increased (Diamond, 2003; Onder et al., 2003); and interpersonal relationships are strengthened (Tessler & Gavrilova, 2010).

Researchers have correlated healthy views toward sexuality and a healthy sex life with enhanced levels of psychological well-being (Estlund & Nussbaum, 1998; Hooghe, 2012; Laumann, Gagnon, Michael, & Michaels, 1994). Positive sexual health has been recognized in the medical community as important to both physical and mental health (Hull, 2008; Lindau & Gavrilova, 2010; U.S. Surgeon General, 2001), and sexual satisfaction has been found to represent a key indicator of relationship satisfaction among couples (Butzer & Campell, 2008; Byers, 2005; Kisler & Christopher, 2008; Litzinger & Gordon, 2005; Sprecher, 2002; Yeh, Lorenz, Wickrama, Conger, & Elder, 2006).

By increasing the scientific community's understanding of the congruence and overall importance of attitudes toward sexuality and expressed sexual behaviors, it is hoped that people will be empowered to approach sexuality in a more open and honest fashion while simultaneously promoting receptivity to new knowledge, specifically as it relates to human sexuality. The findings from this study may be evaluated to help provide positive social change by promoting a healthier level of sexual communication between partners through enhanced communicative efforts. Sexual maladaptive behaviors influenced by specific religious doctrines may ideally be deterred within the individual. A clearer understanding of this relationship may further help guide the scientific community's understanding of the behaviors associated with latent sexual risk taking.

### **Ethical Considerations**

Ethical considerations that I made for the quantitative study included informed consent, given that the participants disclosed sensitive information regarding personal sexual behaviors and attitudes toward sexuality. Participant confidentiality served as an additional ethical consideration, and it was incumbent upon me to protect the confidentiality of all collected data for this research study. Participation was completely voluntary and anonymous. All individuals comprising the study sample were allowed to withdraw their participation at any time with no adverse repercussions. I further coded all data to ensure anonymity. The study involved no special or high-risk populations, and the time investment for all participants was minimal. I included participant confidentiality and nondisclosure statements as part of the consent-form package, and I took all necessary precautions to ensure confidentiality via the chain of custody and active participation with all associated data-handling procedures.

### **Summary**

Research targeting increased understanding of the relationship between religiosity and sexuality is greatly needed, particularly given the existing gap in this unique area of research. While a substantive amount of empirical data exists on religion and its relationship with individual phenomena such as coping strategies, self-expression, self-fulfillment, and happiness, as well as the possible deleterious effects, such as physical or intimate self-deprivation, additional research is needed with respect to how religiosity may shape and dictate sexual behaviors and attitudes toward human sexuality. Enhanced knowledge in this area may assist in the scientific community's enhanced understanding

of the development of more successful therapeutic modalities with respect to sexual awareness and behavior. The importance of such research is also indicated by the critical cognitive evolution of young adults, specifically between the ages of 18 and 25, which is a time period reflective of the delicate construction of individual identities (Arnett, 2000; Kirk & Lewis, 2013).

This dissertation is divided into five distinct chapters. Chapter 2 includes a comprehensive review of the literature pertaining to religiosity and sexuality. In Chapter 3, I described the strategy for selection of the research method, the various forms of data collection and validation that I used to enhance reliability and validity of the study, possible ethical issues or challenges, and my role as the primary researcher for this study. In Chapter 4, I presented the findings of the data analysis and identified themes found in the data. Chapter 5 included a detailed discussion of the study including the implications of the findings for future research, the strengths and limitations of the study, and final conclusions and recommendations.



## Chapter 2: Literature Review

### **Literature Search Strategy and Theoretical Foundation**

In this review, I examined studies pertaining to the relationship between religiosity and sexual behaviors. I also investigated the manner in which researchers have associated religiosity with attitudes toward sexuality. The purpose of the review was to provide a comprehensive and reflective critical examination of existing research related to a possible correlation between expressed sexual behaviors and attitudes toward sexuality, as well as how religiosity influences these thoughts and behaviors. To gather materials for this literature review, I searched the following online scholarly databases: PsychARTICLES, MEDLINE, ProQuest, CINAHL Complete, EBSCOhost, Pub Med, PsychINFO, SocINDEX, LGBT Life, PsychTESTS, and PsycCRITIQUES. Keywords used in the searches included *religiosity, religion, faith, religious tradition, sex, sexual behaviors, sexual attitudes, sexual thoughts, control, cognitive-dissonance theory, CDT, self-determination theory, and SDT*.

One of the theoretical frameworks selected for this research was Cognitive-dissonance theory. Cognitive-dissonance theory (CDT) is one of the cognitive-consistency theories, which holds that individuals are essentially empowered with an innate, internal drive to maintain a homeostatic state. This state involves an internal mindset that dictates deeply held attitudes and beliefs through which these attitudes and beliefs are expressed in the form of behaviors (Festinger, 1957). According to CDT, if an attitude, belief, or behavior changes, the complementary belief, attitude, or behavior must also change. Religious orientation often dictates a relatively restrictive range of sexually

acceptable behaviors that are aligned with the tenets of the religious doctrines. If an individual's sexual attitudes, beliefs, and behaviors stray from the preestablished religious guidelines related to sexuality, that respective individual would be expected to present with a higher degree of cognitive dissonance.

Self-determination theory (SDT) focuses specifically on the quality of motivation, as opposed to the quantity, and holds that both intrinsic and extrinsic motivating factors support or negate individual participation (Amiot & Sansfacon, 2011; Deci, 1975; Deci & Ryan, 2000; Lepper, Greene, & Nisbett, 1973). Introjected motivation is inherent to SDT, which indicates that behavior is only internalized to a certain degree (Sheldon, 2006). Motivation is often treated as an independent construct; yet, individuals frequently engage in certain behaviors due to external social pressure (Deci & Ryan, 2000; Wulff, 1991).

Intrinsic religiosity is characterized by the pursuit of religion based upon individual justification; extrinsic religiosity is characterized by an individual's dedication to a religion because of the byproducts of social inclusion, socialization, or social status (Allport & Ross, 1967; Buros, 1959). Intrinsic religiosity is primary in nature with a deep orientation, whereas extrinsic religiosity is more utilitarian in nature. In accordance with SDT, religiosity can be driven both by autonomous motivations, such as internal satisfaction gained from the attendance of, and participation in, church services and, conversely, by the desire to conform to societal norms or to avoid external criticism for lack of religious participation (Deci & Ryan, 1985, 2002; Grolnick, Deci, & Ryan, 1997; Soenens et al., 2012).

## Theoretical Framework

Researchers recognize autonomy as a core theoretical construct in the study of human motivation (Reeve, 2006; Ryan & Deci, 2000). In accordance with SDT, an individual may participate in a given religion; however, the motivation is purely extrinsic. An example is forcing a teenager to attend church every Sunday, even though he or she lacks the internal, intrinsic motivation to engage in such an activity. Because the youth senses the behavior is expected, nonparticipation can potentially lead to feelings of guilt or shame (Deci & Ryan, 1991). Researchers have found that participation in religious services based upon extrinsic motivation is positively correlated with depression, disruption in self-esteem, and increased questioning of the meaning of life (Bush et al., 2012; O'Connor & Vallerand, 1990). The opposite behavioral pattern is evident when the motivation is intrinsically oriented (Neyrinck, Vanteenkiste, Lens, Duriez, & Hutsebaut, 2006; Ryan, Rigby, & King, 1993).

The possible incongruence between internal self-regulating behaviors and external pressures, particularly as they relate to societal conformity, is worthy of further research. It is within this possible state of incongruence that individuals typically attempt to understand and rationalize their own behaviors and the behavior of others (deCharms, 1968; Heider, 1958; Johnson, 1993; Ryan & Connell, 1989). Researchers have suggested that the more internalized or intrinsic the religious practices, the more positive the results on general psychological well-being (Assor, Cohen-Malayev, Kaplan, & Friedman, 2005; Sheldon, 2006). This aligns with the theoretical underpinnings of CDT, which posits that an individual will attempt to seek congruence between thoughts and behaviors (Deci &

Ryan, 2000; Soenens et al., 2012), and with SDT which posits that an individual will be motivated to behave in a manner that supports well-being (Neyrinck et al., 2006).

### **Background**

Individual worldviews and beliefs are shaped by religious orientations (Boduroglu, Shah, & Nisbett, 2009; Friedman et al., 2008; Hommel & Colzatto, 2010; McCullough & Willoughby, 2009). This relationship between individual worldviews and the influential nature of religious orientation spurs the following questions: How can individuals' religiosity be measured? Which aspects of personal and communal belief influence attitudes toward sexuality and sexual behavior? The easiest way to measure "religiousness" is to determine religious denomination and affiliation; however, religious views on sexuality can also be influenced by individual perspectives, cultural and social norms, and familial influences (Cowden & Bradshaw, 2007; Starbuck, 1897a, 1897b). Consequently, understanding denomination can be useful for determining general trends, but it is not a metric with sufficient power to promote greater understanding of individual and societal beliefs.

Another method of measuring religion is with a religiosity metric that assesses the strength of religious beliefs and the importance of religion in overall life (Ahrold, Farmer, Trapnell, & Meston, 2011). Early researchers used church attendance as a metric, but this is frequently inaccurate because it is a behavior that can be influenced by family and society. Although attendance remains a useful measure, many researchers have asked individuals to self-assess their religiosity via questions establishing whether they pray or read biblical scriptures. This provides an idea of the importance of faith to the individual

(Cowden & Bradshaw, 2007). Researchers can also use measures of religiosity to evaluate how secular behavior impacts beliefs (Penhollow, Young, & Denny, 2005). To further address this issue, researchers have often categorized internalized religious beliefs and external religious behavior as intrinsic and extrinsic religiosity (Ahrold, Farmer, Trapnell, & Meston, 2011; Allport & Ross, 1967; Cowden & Bradshaw, 2007).

Established religious doctrines commonly lay the foundation for a normative script of behaviors to which followers are expected to adhere (Galen, 2012; Koole, McCullough, Kuhl, & Roelofsma, 2010; McCullough & Willoughby, 2009; Myers, 2000; Smith et al., 2003). These doctrines typically dictate sexual behaviors such as the engagement in premarital sex, homosexuality, and attitudes toward sexual behavior (Duran, 1993; Helminiak, 2008; Jacobs, 1997). Formalized religious institutions commonly provide their followers with moral scripts designed to dictate sexual behavior. These scripts typically place greater emphasis on sexuality as expressed in the context of marriage or a formal social contractual obligation, while discouraging nonmarital sexual behavior (Christiano, Swatos, & Kivisto, 2002; Stolzenberg, Blair-Loy, & Waite, 1995; Wilcox, Chaves, & Franz, 2004).

### **Contemporary Trends**

The common perception of the boundary between sexuality and religion, as often portrayed in the U.S. media and popular entertainment, is that of a stark and insurmountable divide. Contemporary entertainment mediums, such as television and movies, often incorporate the repressed, joyless sexuality associated with strong religious beliefs into their respective brand of humor. Religiously oppressed adolescents rebel with

sexual abandon, attempting to escape dogma and the clutches of tyrannical parents. In the debate over gay rights, various subsets of the American media commonly refer to “Christian bigots” and the “liberal gay agenda,” using this largely artificial dichotomy as a political “weapon” to polarize public opinion (Feldman, 2011; Sutter, 2011; Young & Anderson, 2017). Because religion and sexuality are inextricably linked with politics, culture, ethnicity, and socioeconomics, they are often used to humiliate and create conflict around the assumption that religion and sexuality simply cannot mix.

Similar to many political debates, the described dichotomy ignores the moderate ground of consensus and tolerance. From a U.S.-centric perspective, gay marriage and the reproductive rights of women dominate political debate, and adolescents are commonly portrayed as oversexed and undereducated (Eberl, Boomgaarden, & Wagner, 2015; Haselmayer, Wagner, & Meyer, 2017; McKeever, Riffe, & Carpentier, 2012; Wagner & Collins, 2014). This frequently toxic integration of religion and politics often obscures any areas of agreement, or can be used by canny politicians to guide opinion away from other topics. To further compound the issue, polarization has “sidelined” many of the real issues shaping the relationship between religion and sexuality such as sexual risk taking and the emotional well-being of adolescents and young adults.

Rather than promoting a divide between religion and secularism, social-health practitioners should address the notion of whether common ground exists upon which religion and spirituality can be used to improve sexual education and lower sexual risk taking. For example, are possible therapeutic and mental health interventions influenced by the individual’s religious background? Early psychological researchers documented a

relationship between sexuality and religiosity. Kinsey et al. (1948, 1953) noted the positive correlation between religious devoutness and reduced masturbatory behavior and decreased participation in masturbatory behavior, intercourse during marriage, premarital sexual activities, and homosexuality. Similarly, the landmark publication *Human Sexual Inadequacy* (Masters & Johnson, 1970) showed that individuals raised within strict religious traditions present with higher degrees of sexual dysfunction inclusive of impotence, vaginismus, and anorgasmia (see also Baumeister, 2005; Horn, Piedmont, Fialkowski, Wicks, & Hunt, 2005; Murray, Ciarrocchi, & Murray-Swank, 2007).

### **Sexual Restrictions**

Numerous studies have shown strong relationships between religiosity and guilt over sexual behaviors (Langston, 1973; Mosher & Cross, 1971; Remez, 2000; Sack, Keller, & Hinkle, 1984; Schulz, Bohrnstedt, Borgatta, & Evans, 1977; Street, 1994; Wulf, Prentice, Hansum, Ferrar, & Spilka, 1984). The majority of existing research has also indicated significant differences between religiosity and sexual behaviors and attitudes, particularly as they relate to nontraditional sexual behaviors such as anal or oral sex (Baumeister, 2005; Blumstein & Schwartz, 1983; Laumann et al., 1994; Murray, Ciarrocchi, & Murray-Swank, 2007; Pluhar et al., 1998; Reed & Meyers, 1991; Strassberg & Mahoney, 1988; Weinberg, Lottes, & Shaver, 2000; Wulf et al., 1984). Certain sexual practices are heavily restricted by societal or cultural norms and subsequently regulated within religious contexts. Masturbation, for example, is often viewed as highly contentious subject matter, given that it promotes individual pleasure

and an overall hedonistic orientation rather than concerted propagation of the human species (Das, 2007; Hawkes, 2004; Kaestle & Allen, 2011; Levin, 2007).

Masturbation remains condemned by the Catholic Church, which views it as a legitimate mortal sin (Allgeier & Allgeier, 2000). Although masturbation is positively embraced in both the medical and psychological communities where it is viewed as a healthy manifestation of the normal maturation process, particular religions have devoted considerable documentation to condemn the act (Bullough, 1980; Hawkes, 2004; Pagels, 1988). These include Catholicism, Protestantism, Adventism, Eastern Orthodox Mormonism, Jehovah's Witnesses, Orthodox Judaism, and various sects and denominations of Islam and Christianity.

Many religions have pathologized homosexuality and overt interest in sexuality by women, which are often viewed as symptomatic of individual perversion (Hart & Wellings, 2002). Some of the more dominant religions, such as Christianity and Islam, have established a more functional justification of sex, specifically for reproductive purposes, as opposed to pure psychological or somatic enjoyment (Hull, 2008). Christianity and Islam place restrictive control on sexual behavior in women and homosexuals. Therefore, sexual participation by these marginalized groups is typically met with contempt and condemnation both by religious leaders and their followers (Bello, 2012; Helminiak, 2008; Whitehead & Baker, 2012).

Theistic beliefs are deeply imbedded in societal structure, to the degree that failure to conform to the dominant religious tenets is often viewed as highly suspicious



by fellow members of the respective society. Failure to actively participate in the religious practices of a given culture is commonly viewed as deviating from the spectrum of societal normalcy (Maccio, 2010; Nicolosi, Byrd, & Potts, 2000). The invocation of a deity or deities is so commonplace in the majority of cultures across the globe that behavior is often viewed from within the context of mere practice for the afterlife (Bullough, 2002; Helminiak, 2008). The irony rests in the realization that behavior does not assume a universal standard. It is typically viewed as acceptable or sinful, depending upon unique cultural variances. What may be perceived as noble and worthy of escalation to a presumed afterlife in one culture may conversely be viewed as sinful and worthy of eternal damnation in another (Helie, 2000; Helminiak, 2008).

Christianity-based religious institutions have a long history of sexual repression and policing (Abbott-Chapman & Denholm, 2001; Beck & Taylor, 2008; Neyrinck et al., 2006). Homosexuality is one form of sexual behavior that is commonly viewed under a veil of suspicion and representative of an egregious sin, one that should be dealt with via various sanctions, both in the current life and in the afterlife proposed by Christianity-based religions (Whitehead & Baker, 2012). Because of religious-driven philosophies, this condemnation is often legally codified within the culture. For example, Amnesty International reports over 80 countries that criminalize homosexuality in their local criminal codes (as cited in Helie, 2000). Ironically, scholars have argued that some Christian institutions, particularly the Roman Catholic Church, actually provide a safe haven for homosexuals who did not want to adhere to a heterosexual lifestyle but also did

not want to draw negative societal attention for failure to participate in the normative practice of heterosexual marriage and child rearing (Jones, 2011).

The Roman Catholic Church and unique movements within the Church of England have embodied a strict sense of celibacy among those entrusted with promoting the faith. These members can therefore refrain from “normal” heterosexual activity without drawing scrutinizing attention from the public and, perhaps more importantly, the watchful eye of the Church (Hanson, 1997; Hilliard, 1982; Jones, 2011; Reed, 1988; Roden, 2002; Weeks, 1981). Their self-professed love for the deity, as postulated in the religious teachings, supersedes the need for individual expression of love and sexuality while simultaneously serving as a possible “cover” for those with either latent or expressed homosexual tendencies.

Christians believe their adherence to a moral code is derived from the strength of a sovereign deity, Jesus Christ, as set forth within their primary religious text, the Bible. These values are believed to be transcendent; therefore, theoretically, believers and worshippers lack the option to select which tenets of the Bible to which they wish to adhere and those they wish to disregard. In reality, the majority of Christianity worshippers adhere to or reject values that resonate with them on a personal level or those that are reflective of the contemporary social milieu (Hodge, 2005). Believers typically condemn homosexuality; yet, many Christians reside in countries in which the societal acceptance of homosexuality has become much more common. In June of 2015, the United States Supreme Court ruled in a favorable 5-4 decision of the lawful authority for same-sex couples to marry (*Obergefell v. Hodges*, 2015). This ruling therefore

effectively overturned many of the existing state restrictions against gay marriage. Prior to this ruling, thirty-seven U.S. states legalized same-sex marriage (Freedom to Marry Foundation, 2015) and American acceptance of same-sex marriage continues to demonstrate a progressive trend toward inclusion (Smith, 2011).

Religious attitudes toward homosexuality range from indifference (i.e., in Confucianism and Taoism) to strictly forbidding (i.e., in Islam) with a spectrum of stances in between (Helminiak, 2008; Win-Gallup International, 2012). In countries dominated by Islam and Muslim religious traditions, such as Yemen, Saudi Arabia, Afghanistan, Iran, Sudan, Nigeria, Somalia, and Mauritania, homosexuality can be punishable by death (Itaborahy & Zhu, 2013). Homosexuality is also viewed as a violation of Islamic Sharia law and, within Islamic cultures, homosexuality and sodomy are classified as crimes considered worthy of severe punishment by both mankind and the worshiped deity (Bello, 2012; Jamal, 2001).

The overt expression of individual sexuality is discouraged by many religions. Priests and nuns of the Catholic faith are expected to deny and suppress natural innate sexual desires and adhere to strict, unnatural rules of celibacy (Bullough, 2002; Fones, Levine, Althof, & Risen, 1999). Catholics further denounce masturbation and premarital sex, viewing both behaviors as mortal sins (Allgeier & Allgeier, 2000; Cowden & Bradshaw, 2007). Mormonism has a long history of masturbation condemnation (Malan & Bullough, 2005), while some Latter Day Saint sects concurrently support sex with minors and plural marriages (White & White, 2005). Many religions also preach against premarital sex or sex for pleasure, instead proclaiming that sex is to be reserved for

married couples solely for procreative purposes (Clement, 2009). Adultery is punishable by death within Saudi Arabia, Iran, Yemen, and Nigeria (International Commission Against the Death Penalty, 2013). Public displays of affection, such as kissing, can be viewed from within a sociocultural legal context as public obscenity in countries such as India, Dubai, Indonesia, Iran, Iraq, Oman, Yemen, Bahrain, Qatar, Syria, Saudi Arabia, Egypt, Lebanon, Jordan, Cypress, Kuwait, Turkey, and the State of Palestine (Afreen, 2013; Human Rights Watch, 2016). Buddhism also considers public displays of affection as taboo or a violation of religious etiquette (Clement, 2009).

Sexuality and the preservation of sexuality are so deeply embedded within human nature that allegations of tainted sexuality can be met with extreme forms of violence, particularly toward women. Bride burning for example represents an extreme form of domestic violence resulting from dissatisfaction over a marriage dowry (Niaz, 2003). This archaic practice still occurs in locales such as India, Bangladesh, and Pakistan, although it is commonly hidden under the rouse of an “accident” (Kumar & Kanth, 2004; Niaz, 2003). Even when reported, such incidents within these patriarchal societies are rarely investigated due to deeply rooted cultural tradition (Clement, 2009). Muslims place boundaries on women that are so restrictive that a Muslim woman may not be seen in public with a male who is not a family member. Individuals engaging in homosexual behavior, or those involved in extramarital affairs, can be executed (Barlow & Akbarzadeh, 2006; Fernandez, 2009). Each of the major Abrahamic religions impose sanctions against women who express their sexuality or sexual desires in ways that

violate religious tenets (Adamczyk & Hayes, 2012; Finke & Adamczyk, 2008; Jamal, 2001).

Sexual desire and behaviors have played a central role in human history; yet, they have often introduced a palpable threat to political, social, and religious order (Hatfield & Rapson, 1993). Within contemporary cultures, many individuals struggle to resolve the connection between religion and sexuality. Religious doctrines commonly dictate sexual attitudes and behaviors; yet, individuals often remain willing to engage in sexual practices that negate their religious orientation (Carroll, 2005; Chandra, Martinez, Mosher, Abma, & Jones, 2005; Finer, 2007; Martinez, Chandra, Abma, Jones, & Mosher, 2006).

### **Intrinsic and Extrinsic Religiosity**

Intrinsic religiosity measures the importance of religion to individuals and its application to normal life (Ahrold et al., 2011; Cowden & Bradshaw, 2007). Individuals internalize intrinsic religiosity to draw personal strength, socialize with like-minded people, or gain standing within the local community. Conversely, extrinsic religiosity is pragmatic in nature and describes religious behavior shaped by external forces such as attending church to maintain social standing (Cowden & Bradshaw, 2007). Using the frequency of church attendance to measure religiosity may not capture the actual importance of the church services, which is an issue that may affect intrinsic religiosity (Ahrold, Farmer, Trapnell, & Meston, 2011).

Religiosity can profoundly affect sexual attitudes and behaviors. Penhollow et al. (2005) examined a number of variables including the frequency of church attendance and

self-assessed religiosity. These researchers found a link between religiosity and sexual behavior, with frequent church attendance correlating with reduced sexual activity. Virgins were found to have higher religiosity than nonvirgins and were more likely to feel sexual guilt. Ahrold et al. (2011) found that religiosity strongly correlates with sexual attitudes, with religious women more likely to seek long-term partners than nonreligious women. In addition, the women were less likely to engage in premarital sex, and likely to have fewer sexual partners. Put simply, strong, personal, intrinsic religious beliefs are associated with conservative sexual attitudes (Ahrold et al., 2011; Ahrold & Meston, 2008). Davidson, Moore, and Ullstrup (2004) noted that female college students tend to have high intrinsic religiosity and, therefore, high levels of sexual conservatism.

### **Spirituality**

In recent years, many individuals have chosen to label their beliefs as *spiritual* rather than *religious*. Many definitions are used for spirituality. It is a psychological construct with meaning that depends upon the perspective and interpretation of each individual (Burris, Smith, & Carlson, 2009). Spirituality can assume many forms including “New Age” thought or the incorporation of indigenous beliefs and eastern philosophy, or it can simply indicate beliefs that diverge from organized religion (Ahrold & Meston, 2008). *Religiosity* implies adherence to an external belief system and set of guidelines, whereas *spirituality* is a more personal belief in a deity(ies) or universal force. Given this definition, spirituality is a more direct connection with a deity, while religion provides guidelines and a framework for expressing this internal belief (Burris et al., 2009; Smith & Horne, 2008).

Researchers have used a number of methods to measure spirituality including self-assessments of spiritual connectedness and embodied spirituality (Ahrold et al., 2011). Ahrold et al. (2011) found that individuals claiming to be spiritual, but not religious, attend church less, pray with less frequency, do not consistently adhere to religious dogma, and practice sociopolitical conservatism less than those who identify as both spiritual and religious. Cowden and Bradshaw (2007) discussed another type of religiosity—the Quest Approach—wherein religion is used as a philosophical tool in the quest for truth and meaning in life. However, this approach has only been the focus of a few research projects and can be primarily viewed as a subcategory of spirituality.

Spirituality may lead to different sexual attitudes and behaviors than are accepted on traditional religious paths (Burriss et al., 2009). It has been positively correlated with a higher frequency of sex and a higher number of sexual partners, especially among university students (Ahrold et al., 2011; Ahrold & Meston, 2008). Spirituality can be strongly related to sexuality due to the notions of *spiritual connection* and *transcendence*. Emotional and pleasurable sex can be an integral facet of seeking interconnectedness with other humans, leading to more liberal sexuality. Women reporting strong spirituality may experience high levels of sexual satisfaction (Smith & Horne, 2008). Burriss et al. (2009) suggested that spiritual Christians experience heightened sexual pleasure and transcendence through a sense of psychologically connecting with others and with the divine.

Young Christians with strong spirituality are more likely to have open viewpoints and choose the aspects of religion that appeal to them (Burriss et al., 2009). Spirituality

may predict liberal attitudes toward contraception, homosexuality, sex education, and gender roles (Ahrold & Meston, 2008). Interestingly, those female participants in the Burris et al. (2009) study identifying as spiritual had more sexual partners, more vaginal sex, and a lower use of condoms than the male participants identifying as spiritual. The spiritual males did not report a significant increase in sexual behavior. This may be because male sexual pleasure is more physical than the emotional attachment often sought by women. Additionally, the sexual satisfaction of males is accepted by society and religion as a natural need; hence, the need to rebel against conformity is far less for men.

It is noteworthy that religiosity and spirituality are not independent; overlap exists, as well as conflict between ideals. Group participation in religious ceremonies is not always the norm with either religious or spiritual individuals. Intrinsic religiosity measures the impact of religion on daily life, while spirituality implies a personal connection to a divine being or force (Ahrold & Meston, 2008). Interestingly, spirituality within organized religion appears to be liberating, whereas it may be restrictive outside religion (Ahrold et al., 2011). Ahrold et al. (2011) emphasized that, in a society where the importance of organized religion is declining, spirituality may become increasingly important; hence, related research is warranted.

### **Religiosity, Ethnicity, and Culture**

Although the U.S. population is becoming increasingly multicultural, differences in views related to sexuality between ethnic groups continue (Ahrold & Meston, 2008). African Americans have demonstrated more conservative attitudes toward homosexuality



than Hispanics and European Americans; however, Hispanics appear to be less tolerant of premarital and extramarital sex. Acculturation introduces complexity to this issue, with ethnic or cultural groups of immigrants absorbing the wider cultural norms of the dominant society. Ahrold and Meston (2008) surveyed Hispanics, Asian Americans, and European American college students within the United States to determine the effects of heritage and mainstream cultures on each ethnic group and uncover any potential relationship with religiosity. These researchers found that, for many ethnic groups, religiosity is linked to heritage, potentially providing a secondary measure of cultural differences. Shared religiosity may be more important and homogenous than cultural or national history or background.

Ahrold and Meston (2008) found that Asian Americans tend to hold particularly conservative attitudes toward sex. However, the sexual attitudes of Hispanics and Asian Americans converged to assume European American views as the level of acculturation increased. Across all ethnic groups, the intrinsic religiosity and spirituality of women were found to be strongly linked, and the relationship between conservative sexual attitudes and religiosity was stronger when spirituality was concurrently stronger. Intrinsic religiosity and religious fundamentalism correlated with conservative attitudes for European Americans and Asian Americans, but not for Hispanics. For Asian Americans and European Americans, intrinsic religiosity and fundamentalism were found to be predictors of sexual attitudes; however, spirituality was affected only in Asian populations.

For women, spirituality and intrinsic religiosity were found by Ahrold and Meston (2008) to predict attitudes toward homosexuality, casual sex, and extramarital sex, with the relationship between conservative attitudes and these variables higher when spirituality is higher. Religiosity was found to be a better predictor of sexual attitudes in females than in males. Acculturation did not account for conservative attitudes toward homosexuality and casual sex among the Asian American study group. This could be because elements of cultural identity may present greater resistance to change; hence, Asians may adopt only the elements of the mainstream culture they believe enhance their existing cultural beliefs, while Hispanics tend to blend the Hispanic and European American cultures (Ahrold & Meston, 2008; Tan & Yarhouse, 2010).

Latinas within the United States report higher rates of HIV and sexually transmitted diseases (STD's), as well as the highest rate of premature births among all ethnic groups. Just over one half of all Latinas are pregnant prior to 20 years of age, which can lead to long-term issues (Edwards, Haglund, Fehring, & Pruszynski, 2011). Less than one half of the Latinas participating in a study conducted by Edwards et al. (2011) reported religion to be of high personal importance, and those with high religiosity reported fewer sexual partners and a higher age at the first experience of intercourse than Latinas who did not identify with high religiosity. Approximately one third of the respondents to a survey administered by Edwards et al. (2011) reported a high frequency of church attendance, less likelihood of practicing sex, few sexual partners, and a higher age at the first experience of intercourse.

Edwards et al. (2011) emphasized that the cultural notion of *marianismo* may introduce problems for young Latinas. This idea draws upon characteristics of the Virgin Mary, with women expected to be virginal, pure, and self-sacrificing while simultaneously serving the sexual desires of men. The importance of female virginity runs parallel to the cultural idea of motherhood, which requires a loss of virginity. This contradiction may contribute to the complexity surrounding Latina religiosity and the manner in which it relates to sexuality. Regardless, religiosity may protect Latinas by providing positive behavioral models and sanctions against problematic behavior, while encouraging positive and supportive family and community environments.

Minority groups struggling with religious discrimination typically ally with similar groups (Hunt & Jung, 2009). However, support for one minority group does not always result in support for another, and one group may intentionally or unintentionally sideline another when competing for limited resources. This is referred to as *cultural appropriation*. One subgroup not only adopts the language and vocabulary of another, but these linguistic elements become facets of their identity. One example is White teenagers who adopt the speech and mannerisms associated with the Black gangster rap culture (Anspach, Coe, & Thurlow, 2007).

It is common to associate atheism with support for gay rights, and there is indeed an overlap. However, Anspach et al. (2007) reported that some atheist groups have “borrowed” vocabulary from the gay-rights movement such as “coming out of the closet” (p. 5). This type of appropriation may be problematic for the original population group if it is perceived as downgrading their struggle or diluting the original intent of the

phraseology. Not all homosexuals are atheists, even if an overlap exists in the manner of discrimination within certain arenas; consequently, they may not desire to be associated with antireligious sentiment. It is safe to assume that the average atheist fully understands and appreciates the historical difficulties encountered by the gay population as a result of religious dogma. Being linked to atheist groups could render the struggle of homosexuals seeking acceptance within religion more difficult. It may also give authoritarian religions more “ammunition” and justification to continue the status quo of discrimination. Put simply, associating homosexual populations with atheists provides religious groups the passive-aggressive means to claim that homosexuals, allied with atheism, are a threat to their religious way of life and are promoting an overt, antireligious agenda (Anspach et al., 2007; Stefurak, Taylor & Mehta, 2010).

### **Religious Fundamentalism**

In many ways, religious fundamentalism can be viewed as “the other end of the scale” from spirituality, with significant effects on sexual attitudes and behavior due to its strong links with political conservatism (Bernstein & Jakobsen, 2010). Fundamentalists tend to believe in the inerrant nature of scripture, with a strong conviction that their behavior in daily life should follow formal doctrine. Unlike intrinsic religiosity and spirituality, religious fundamentalism tends to reject other influences on personal faith such as philosophy, personal experience, and alternate interpretations of scripture (Ahrold et al., 2011). Although it is largely associated with American Christianity, many religions have fundamentalist denominations and members.

A number of researchers have conducted studies on religious fundamentalism and found a strong negative correlation with attitudes toward premarital sex and traditional gender roles (Ahrold et al., 2011). Ahrold et al. (2011) drew the interesting gender-based conclusion that fundamentalism and intrinsic religiosity are likely to affect women more than men because women are traditionally viewed as the “keepers of the faith.” Christian beliefs teach that it is important for women to restrict sexuality and maintain virginity until marriage. Men, however, are often subjected to more liberal views concerning premarital sex and loss of virginity. Fundamentalism may be linked to authoritarianism, which can develop in individuals an unbending and absolute belief in their “righteous” ideals. Those with fundamentalist beliefs are likely to express prejudice such as racism or homophobia, if they also have an authoritarian outlook on life (Stefurak et al., 2010). Farmer, Trapnell, and Meston (2008) argued that fundamentalism, rather than religiosity, is actually the driver of conservative sexual beliefs and may be a more effective qualitative tool for investigating links between sexual behavior and religion.

Contemporary New-Age beliefs draw upon spirituality, folk religion, and paganism, which often overlap with the belief in paranormal activity such as the supernatural, superstitions, and alternative visions of life after death. A strong positive correlation may exist between the level of paranormal belief and the interest in short-term sexual partners (Ahrold et al., 2011). Paranormal belief suggests more liberal behavior, perhaps due to sexual freedom becoming part of the religious experience and ritual, in a way similar to some aspects of spirituality.

### **Benevolent Versus Aggressive Deities**

An additional distinction that may influence studies on sexuality is the nature of a worshiped deity or God, as portrayed by a religion, which may shape individual beliefs surrounding the world. Extremist acts, such as suicide bombings or discriminating against minorities, demonstrate how religious belief can intensify tension. Among these fundamentalist interpretations, breaking the core moral code of religious dogma is worthy of harsh punishment. However, this contrasts with the humanitarian and tolerant aspects of religion that would portray religious individuals as more likely to donate to charities, help others in need, or use faith as a source of strength with which to cope with personal hardship (Johnson, Li, Cohen, & Okun, 2013).

Johnson et al. (2013) explored the belief in a benevolent, authoritarian, and punitive God. Such faith encourages cooperation in areas where resources are scarce and with a low propensity for dishonesty. However, believers in an authoritarian God are also less tolerant of the moral tenets of others, such as adultery, homosexuality, and abortion, and are more likely to approach conflict as a battle between good and evil (Bader & Froese, 2005; Johnson et al., 2013). Religious authoritarianism can promote intergroup cooperation at the cost of becoming suspicious of outsiders. This often occurs when a group perceives an existential threat to their social status.

A benevolent deity may be more personal and withdrawn than an authoritarian God, acting as a source of spiritual strength and rarely delivering misfortune upon humanity (Johnson et al., 2013). Overall, faith in a benevolent deity tends to motivate an acceptance of divergent beliefs and ways of life. Such belief is linked to a high self-

esteem and notions of individual responsibility. A sense of social responsibility leads to tolerance for other cultures, faiths, and groups with alternative viewpoints (Bader & Froese, 2005; Johnson et al., 2013). Allport and Ross (1967) proposed that individuals with a high level of intrinsic motivation tend to believe in a benevolent deity. However, within the same religion, the often contradictory notion of God as both authoritarian and benevolent can lead to internal conflict and schisms. Both Christianity and Islam present God as punishing transgressors while also preaching tolerance and forgiveness (Johnson et al., 2013). However, this perception is primarily dependent upon why and how scripture is interpreted. The manner in which historical development of religion has shaped scriptural interpretation, and views of sexuality are questions pivotal to the study.

## **Religiosity**

### **Sexual Behaviors**

In terms of how religion and religiosity influence the sexual behaviors of adults, researchers have suggested that religion plays a major role; however, the topic is complex and changeable. A strong religious commitment, measured by church attendance, suggests a low likelihood of abortion, premarital cohabitation, and childlessness. The underlying causal factors may include the potential for religious individuals and communities to be more resistant than secular groups to societal changes driven by changing demographics and they may become more conservative in nature (Burriss et al., 2009).

The driver of the negative correlation between religion and sexuality may be the notion that religious denomination has an effect on religious attitudes. However, the

influence of Christian denominations is often unclear. Researchers have found that Pentecostal Christians, Jehovah's Witnesses, and Mormons are less likely than other religious denominations to support or engage in premarital sex (Davidson, Darling, & Norton, 1995). Other investigators have found more conservative sexual attitudes within fundamentalist Protestant groups, as well as more liberal views among mainstream Protestants and Catholics compared to fundamentalist Protestants (Ahrold et al., 2011). Burris et al. (2009) suggested that this may be because it is difficult to force religious denominations into categories due to differences in religiosity within each group. Religious affiliation may highlight general trends but does not capture the full complexity of individual and communal attitudes and beliefs.

Frequency of church attendance may also play a role in shaping sexual attitudes and behaviors. Burris et al. (2009) reported that, of their sample population who cohabited prior to marriage, only 9.8% were weekly church attendees, while 22.5% were less frequent attendees, 34.3% were religious but rarely attended church, and 44.3% practiced no religion. However, church attendance as a measure of religiosity is problematic because many of the events related to religiosity have already occurred. The first experience of intercourse is an example because the respective individual may have become more or less religious since the experience. This issue was also addressed by Penhollow et al. (2005) who studied college students and attempted to establish a link between religiosity and the age of first intercourse. The results suggested an overall correlation between church-service attendance and religiosity during childhood, with religiosity showing no significant decline with age (Burris et al., 2009).



Researchers have found that individuals with strong religious beliefs are less likely to engage in frequent sex than those nonreligious and were less likely to engage in oral sex (Penhollow et al., 2005). Ahrold et al. (2011) suggested that individuals with higher religiosity have more conservative attitudes toward premarital sex and negative attitudes regarding oral and anal sex. Davidson et al. (1995) proposed that interaction exists between religiosity and sexual attitudes. Women who attend church only a few times of year are found to engage in the most frequent intercourse. Clearly, individual religiosity influences sexual attitudes and behaviors, but another fundamental question is worth investigating and that is whether sexual behavior can affect religiosity. Past longitudinal research did not provide support for this relationship, finding that sexual activity rarely affects religiosity (Njust & Bane, 2009; Visser, Smith, Richters, & Rissel, 2006).

Penhollow et al. (2005) suggested that age is the most consistent predictor of first coitus, with religion, gender, and social status acting as additional influences. Burris et al. (2009) also highlighted the importance of age, with older women between 40 and 49 years of age less likely to cohabit. Approximately one half of their study group of women 25 to 29 years of age rarely or never attended church, and only 19.4% of the sample who frequently attended church were within this age-group. Although the lower church attendance possibly indicated less inclination to internalize church teachings among this younger age-group, the older women may have been raised within a different social context. Overall, religiosity, frequency of church attendance, denomination affiliation,

and age all ultimately play a role in expressed sexual behavior. The question remains as to which aspects of sexual attitudes and behaviors are particularly affected by religion.

### **Psychology**

The relationship between religiosity and maladaptive psychological behaviors is important to examine. Early perceptions of the connection between religion and mental illness were not favorable. Mentally ill individuals were often stigmatized and treated under a veil of fear and contempt (Dain, 1992; Favazza, 1982; Lowenthal, 1996; Lowenthal & Cinnirella, 1999). Demonic possession or disbelief in a worldly deity or deities often served as causal explanations for mental illness (Dain, 1992; Favazza, 1982; Lowenthal, 1996). Researchers have suggested that religion has also served as a contributing factor (Bergin & Scott, 2000; Ellis, 1980; Freud, 1927; Koenig, Larson, & Weaver, 1998). Conversely, other investigators have suggested that religious individuals report greater subjective well-being, particularly in times of crises (D'Costa, 1995; Reger & Rogers, 2002; Richards & Bergin, 2000).

Fones et al. (1999) found that individuals who belong to the religious sect known as the Jehovah's Witnesses—a restorationist branch of Christianity—present with paranoid schizophrenia at a rate four times higher than the general population, and with general schizophrenia at a rate three times higher than the general population. Catholicism condemns suicide, viewing the act as a mortal sin worthy of eternal damnation, and further condemns any form of physician-assisted suicide or euthanasia (Engelhardt & Iltis, 2005; Radoslaw et al., 2013). However, the Catholic faith maintains that an individual who suffers from true mental illness and participates in the act of

suicide may be spared from eternal damnation because they lack genuine culpability as a result of the mental illness (Engelhardt & Iltis, 2005).

Since the early 1990s, the issue of same-sex union has grown in importance and religion has, in many cases, acted as a source of opposition to the notion. Some states legislated to legalize same-sex unions, while others rejected the practice outright. State legislators attempted to redefine marriage as solely between a man and a woman as the associated political and media battle continued to wage (Whitehead, 2010), culminating in the legality of same-sex marriage at the federal level (*Obergefell v. Hodges*, 2015). Against this backdrop, important questions for research have emerged including how individuals develop a view on same-sex unions, what factors influence their ultimate beliefs, and why homosexual couples desire to marry. How religious attitudes toward homosexuality overlap with political beliefs is another topic worthy of examination. Although researchers have suggested that religious beliefs play a role, it is not the sole cause of opposition to homosexuality. Seemingly inherent to related literature are aspects of religion associated with negative views of homosexuality including biblical literalism; conservative denominations; high church attendance; and the belief in an angry, vengeful deity or deities. Non-Protestant denominations are likely to support gay rights and civil union, and religious activism negatively correlates with support for same-sex unions.

Cowden and Bradshaw (2007) suggested that highly religious individuals are less accepting of homosexuality. A consistent theme that appears to promote antihomosexual views is the notion of homosexuality as a choice rather than genetic in origin. This idea is often perpetuated by religious teaching and is the strongest predictor of opposition to

same-sex unions (Haider-Markel & Joslyn, 2008; Whitehead, 2010). Religiosity is positively correlated with choice, and highly religious individuals are likely to oppose same-sex unions. This exemplifies the strength of the conviction that homosexuality is a choice, even with the concurrent promotion of biological causes for homosexuality. This leads to attribution theory, which posits that individuals who attribute personal responsibility to a group are more likely to develop a negative view of the group, as is the case with HIV, obesity, and poverty. Put simply, individuals who believe in a biological basis for homosexuality are more likely to support same-sex unions. It is possible that the religious selectively use religion as support for their preexisting beliefs and, when the support is removed, they simply abandon their religious orientation (Whitehead, 2010).

Support for a genetic cause of homosexuality leads to greater support for gay civil rights; however, such grounding may also polarize views as many religious individuals become even more antihomosexual. The population groups more likely to believe that homosexuality is a choice include males and political conservatives. Mainstream Protestants and Catholics are less likely to believe in choice than evangelical Christians. Higher levels of education and higher incomes are also indicative of less belief in choice as causal to homosexuality. Belief in a wrathful, active God promotes the opinion of choice, and older individuals are more likely to believe that homosexuals choose their way of life.

It is noteworthy that, since 1977, belief in a biological explanation for homosexuality in the United States has risen from 13% to 41% of the total populace, which runs parallel to a rise in support for gay rights (Haider-Markel & Joslyn, 2008).

Findings from a study of Muslim adolescents within the Netherlands suggest that, because Muslims believe that Allah would not allow a person to be born homosexual, their view of homosexuality is that it is a choice. Smerecnik, Schaalma, Gerjo, Meijer, and Poelman (2010) found that non-Muslims consider homosexuality to be genetic in origin and hence believe homosexuals should not be treated differently.

### **Social Implications**

One important aspect of the variant views pertaining to homosexuality is the difference between union and marriage, with same-sex marriage less supported among religious groups. This is due to the perceived sanctity of marriage between a man and woman. The 2007 Baylor Religion Study of 1,648 individuals indicated that 53.8% of the participants supported unions, while only 32.2% supported same-sex marriage (as cited in Whitehead, 2010).

Stefurak et al. (2010) investigated the overlap of religion and politics by drawing upon right-wing authoritarianism (RWA) and religious fundamentalism; fundamentalist denominations were more likely to occupy the right of the political spectrum. RWA was found to be strongly associated with prejudice against homosexuals, and religious fundamentalism and high religiosity also influenced prejudice. The variables found to influence homophobia included high religiosity, acceptance of social authoritarianism, cultural attitudes toward sexual behavior, and gender roles. Men tended to be more prejudiced than women, and individuals of both sexes discriminated against gay men more than they did lesbians. Men with strong ideas about masculine gender roles were more likely to be homophobic. This may be because heterosexual men view gay males as

a threat, and homophobia is a defensive mechanism when they fall short of fulfilling gender expectations.

Overall, Stefurak et al. (2010) found that RWA is the primary driver of antigay sentiment because authoritarian beliefs tend to promote conservatism and distrust of outsiders who do not share the same beliefs and values. Religious fundamentalism may be, at its roots, a form of RWA as a type of authoritarianism with religious undertones. For women, high religiosity is suggestive of homophobia, and highly religious women who may not necessarily hold to authoritarian or particularly fundamentalist beliefs are likely to marginalize homosexuals because of higher church attendance and reliance on religious teachings. Put simply, homophobia among women is not always drawn from authoritarianism or the desire to punish unconventional behavior.

Why same-sex couples are so favorable toward legal union or marriage is a topic needing further study. The predominate opinion is that homosexuals are nearly as likely as heterosexuals to be religious, and this may provide the impetus for ritualistic commitment (Oswald, Goldberg, Kivalanka, & Clausell, 2008). However, the expression of homosexual religiosity can be very difficult when many religions view homosexuality as a sinful, immoral practice. Rostosky, Otis, Riggle, Kelly, and Brodnicki (2008) surveyed gay and lesbian couples and, although most reported religious tendencies, few attended church on a regular basis. Research into sexuality has generally focused on heterosexuals (Diamond, 2003; Foucault, 1978; Hegarty & Pratto, 2001); few studies have explored the link between the sexuality, religion, and spirituality of gays and lesbians (Degges-White, Rice, & Meyers, 2000; Rodriguez & Ouellette, 2000; Siraj,

2011). Smith and Horne (2008) examined the personal faith of gay, lesbian, and bisexual individuals in an attempt to explore the internalized conflict experienced by homosexuals who believe in a God and religious faith but are referred to as “sinners” or told that their way of life is a choice. Many have faced discrimination by religious organizations, surrounded by a disapproving religious culture that concurrently preached love and acceptance while condemning their lifestyle.

The coping strategies gay individuals employ to reconcile conflict are important to investigate. Many individuals find a faith that is more accepting of their sexuality or will describe themselves as spiritual rather than religious (Hunt & Jung, 2009; Smith & Horne, 2008). The emphasis on individual spirituality and rejection of religious doctrine has many turning to private, rather than public, displays of worship. Others find communities where religious belief is reconciled with sexuality and acceptance (Rostosky et al., 2008).

Religion is linked to well-being (Brown, 2015; Linders & Lancaster, 2013), but if a homosexual couple is forced to reject established churches due to the risk of harm from religious exclusion, spirituality may become more important along with support from each other, family, friends, and support groups. Participation in a faith accepting of homosexuality can provide psychological well-being and positive gains in terms of health (Rostosky et al., 2008). Hunt and Jung (2009) advanced that the biblical interpretations and discrimination faced by lesbians, especially within Christian churches, led them to drift away from organized religion and turn to an internal faith and spirituality. It can be difficult for homosexuals to reconcile their sexual orientation with the message of the

Church, but this does not affect their religiosity, only the manner in which they express their faith.

In the United States, there are an increasing number of ways by which same-sex couples can form the same legal commitments as heterosexual couples including the federal legal acceptance of same-sex unions. This has implications for taxation, inheritance, joint property ownership, and other associated financial and legal responsibilities. Oswald et al. (2008) attempted to determine the factors motivating same-sex couples to make a legal and moral commitment to their relationships. These researchers found no support for the notion of same-sex couples signing legal commitments and seeking other protection purely due to the fear of victimization and antihomosexual sentiment. However, they did find a strong correlation between relationship duration and the likelihood of a legally recognized commitment. Additionally, as with heterosexual couples, sexual satisfaction may improve in a same-sex relationship with the increased stability.

Smith and Horne (2008) found that lesbians in stable relationships are more likely to experience sexual satisfaction, especially if they were spiritually oriented. Interestingly, they also found an inverse relationship between intrinsic religiosity and sexual satisfaction for lesbians, suggesting that this may be due to the internalization of negative religious messages grounded in the condemnation of homosexual acts. Why same-sex couples seek marriage then, when the option of a civil union is available, is a question of research interest. One answer may be the emphasis of weddings within the American culture, as well as the availability of secular and religious resources for same-



sex rituals. These religious commitments provide moral legitimacy and draw upon powerful societal symbolism.

Religiosity connects individuals and couples to a wider group and a cultural source of tradition (Oswald et al., 2008). Many gay individuals may be religious, preferring to share a sacred bond and participate in church attendance and activities (Rostosky et al., 2008). Apart from social acceptance within a society pervaded by monogamy and commitment, marriage contributes to well-being for both partners and contributes to maintaining long-term relationships. This may be because, as with heterosexual couples, the structural element of marriage provides social, economic, and legal barriers to leaving a relationship, which can promote stability and a desire to work through differences. Same-sex couples with the same religious beliefs and spiritual values tend to be more stable when measured in terms of intrinsic religiosity (Oswald et al., 2008).

Parental status is also important in homosexual partnerships, perhaps because a social stigma remains surrounding raising children outside wedlock (Meezan & Rauch, 2005). A same-sex union or marriage may provide a more stable environment for children, improving their well-being, and gay couples may feel that it confers stronger validity and recognition for children who are members of stepfamilies (Oswald et al., 2008). Oswald et al. (2008) found little difference between genders in terms of parents legalizing their relationships. Mothers and fathers were both 3.5 times more likely than childless couples to desire legal recognition of their partnerships. This may reflect the fact that parents attend many more family-oriented rituals, such as baptism; hence, this

commitment may be the next step. Overall, it seems that gay parents, as well as highly religious cohabiting couples, are more likely to marry for the same conservative reasons as heterosexual couples. This is ironic when many religious and right-wing leaders use scripture and protecting children as the rationale for disallowing gay marriage (Meezan & Rauch, 2005; Oswald et al., 2008).

### **Coping Mechanism**

Existing literature evidences that the notion of religion and sexuality as irreconcilable opposites has shifted. Secularism, agnosticism, and atheism are no longer viewed as the single collective source of tolerance and acceptance of alternative moralities. Researchers have increased understanding of the importance of religion and faith to the majority of people, and cultural practices, such as sex education, promoting safe sexual practices, relationship counseling, family therapy, and individual therapy, can draw upon individual and social approaches toward religion (Koenig, 2009). There are many ways of expressing religion, and the religious path of an individual is influenced by family, community, and culture interaction. Religion holds the potential to act as a social bond and can guide people to finding their individual and collective places in the world, concurrently providing strength through adversity (Rostosky et al., 2008).

The positive influence of faith on psychological well-being has been long studied; consequently, incorporating faith into therapeutic interventions has become more common. Despite the rather uneasy overlap of religion and sexuality at times, faith plays a role in the lives of many clients of psychologists and could become a foundation for therapy (Smith & Horne, 2008). Many gay individuals are deeply religious and forced to

develop beliefs that draw upon religious tradition without the discriminatory sentiment. It may be possible for therapists to rely upon spirituality, rather than religion, to promote sexual satisfaction and well-being. This could also lead to a destigmatization of the lesbian-gay-bisexual-transgender community. The therapeutic treatment of sexual issues could benefit from consideration to religious affiliation (Ahrold et al., 2011).

It is noteworthy that the topic of study is not a one-sided issue. There is danger in overemphasizing religion. Religion has historically been an avenue toward relief from the trials of life, but as a replacement for professional treatment, the potential for harm could be significant. The likelihood of seeking professional help when indicated may depend on the perception of where self-responsibility and God's responsibility overlap. Unlike physical conditions, seeking professional help for mental and/or emotional issues can be interpreted as a lack of faith (Andrews, Stefurak, & Mehta, 2011). Psychiatric therapy must consider the various religious and cultural beliefs. A Muslim may have a different viewpoint than a Christian on sexual matters, or an individual of Asian heritage living within the United States may be more culturally conservative than those of other cultural backgrounds, in terms of sexuality. This highlights the major gap within related literature; namely, that the majority of social research approaches the issue of religion and sexuality from an American, Christian-centric perspective. Expanding the boundaries of research into other cultures, ethnicities, and religions could be useful for promoting an enhanced understanding of the described issues. Another limitation noted within the body of existing literature is that many studies have focused on young adults and adolescents;

consequently, any therapeutic recommendations may not be generalizable to populations of older adults (Ahrold et al., 2011; Visser et al., 2006).

### **Sexuality and Guilt**

Given the incongruence that may result from expressed sexual behaviors that negate existing religious texts dictating sexual behavior, guilt represents a common byproduct (Hailparn & Hailparn, 1994; Sheldon, 2006; Tangney & Dearing, 2002). Guilt and its relationship to sex or sexual desire has a long history that includes its association with formal religious institutions (McLaughlin, 2010). Catholicism is perhaps the strongest stereotype in this regard as a religion that places a heavy emphasis on guilt and atonement as a result of behavior deemed to be in violation to current religious doctrine (Demaria & Kassinove, 1988; Hutchinson, Patock-Peckham, Cheong, & Nagoshi, 1998; Sheldon, 2006).

Ongoing and reinforced episodes of guilt can adversely affect individuals, in terms of both psychological and physical health (Sheldon, 2006). Demaria and Kassinove (1988) found that Catholic populations harbor higher levels of guilt in conjunction with failure in self-control when compared to Protestant populations. Celmer and Winer (1990) found higher rates of hypochondriasis, hysteria, and depression on the Minnesota Multiphasic Personality Inventory completed by Catholic priests when compared to the scale scores of participants who were not priests. MacDonald and Lockett (1983) revealed that Catholic inpatients of a German psychiatric clinic had higher rates of obsessive-compulsive and hysteria disorders than did Protestant inpatients.

## **Homosexuality**

Homosexuality represents another manifestation of sexual behavior; consequently, any discussion of the intersection between sexual behavior and religion must include this lifestyle because it reflects one of the most discussed instances of sexual inequality within the Western world. The collective battle for gay rights, civil union, and same-sex marriage is deeply embedded in political debate (Hunt & Jung, 2009). It is necessary to examine the attitudes of religion and society toward homosexuality, but it is also necessary to investigate the attitudes of homosexuals toward religion because homosexuality and religious belief are not necessarily in opposition. Many Judeo-Christian denominations label homosexuality as a sin and marginalize the gay population. As recently as 2003, the Vatican denounced homosexuality as a moral and social danger. As a result, many religions exclude individuals attempting to reconcile religiosity with an alternative sexuality. Same-sex couples will find that they may not have the same level of support from religious institutions and the wider society (Rostosky et al., 2008). Research has indicated that those with high religiosity are less likely to engage in homosexual practices (Visser et al., 2006).

Far from a purely oppressive force, religion could help to protect individuals from the physiological and psychological damage that can result from active sexual activity outside marriage such as unwanted pregnancy or STDs. Religiosity could raise the age of sexual-intercourse initiation, promote contraception, and encourage fewer sexual partners. The strength of religious conviction appears to hold greater importance than religious denomination (Penhollow, Young & Bailey, 2007; Penhollow et al., 2005).

Religion can be a form of indirect social control that can discourage premarital sex and sexual risk taking among adolescent populations (Burriss et al., 2009). Barkan (2006) suggested that religion is a social force that promotes the internalization of moral behavior. This is because religious individuals are more likely to fear divine retribution. They are also likely surrounded by individuals of the same mind-set and will hence face disapproval with deviation from doctrinal tenets. Although sexual decisions are ultimately made by individuals, they are undoubtedly shaped by religious and social factors and contexts (Penhollow et al., 2005).

### **Compensatory Mechanism**

An important area of religious influence is relationship building and marital satisfaction. Wallin (1957) conducted a study of great historical significance. He examined the effects of religiosity on the relationship between sexual gratification and marital satisfaction. Satisfying sex is often portrayed as essential for marriage satisfaction; consequently, sexual dissatisfaction can spur marriage dissatisfaction, often through a sex-drive imbalance unless one partner has a compensatory mechanism. This mechanism can manifest as a wife drawing self-esteem from the income and possessions of her husband. Religiosity could act as a compensatory mechanism by alleviating stress and endowing believers with a long-term outlook such as belief in the afterlife. Wallin sought to determine whether religion serves as a compensatory mechanism with sexual activity that is not gratifying for one or both partners, or whether strong religious views cause sex to be less gratifying. For wives with low sexual gratification, he found that high religiosity led to higher marital satisfaction; therefore, religiosity may indeed play a

compensatory role. For men, the issue was less clear, although low sexual satisfaction did not appear to have as great an effect on marital satisfaction for religious males.

Overall, when partners experience high sexual satisfaction, marital satisfaction does not tend to differ between nonreligious and highly religious couples, and high religiosity appears to support a happier marriage, even when sexual gratification is low. Orathinkal and Vansteenwegen (2006) examined the effects of religiosity on marital satisfaction among Belgium couples who had experienced either single or multiple marriages. These researchers found that couples who attend church frequently seem happier with marriage and less likely to divorce. Gender and marital status were found to have significant effects on religiosity, although age, education, and other variables also played a role. Interestingly, adults with high religiosity appear to have more sexual issues, but these did not always lead to relationship difficulties, possibly due to religiosity substituting for sexual satisfaction.

### **High-Risk Sexual Behavior**

Galvan, Collins, Kanouse, Pantoja and Golinelli (2007) studied individuals with HIV, attempting to establish whether religious denomination and religiosity could promote safer sexual behavior. Religiosity was linked to a lower likelihood of unprotected sex and other high-risk sexual behaviors such as a high number of sexual partners. Catholics were the least likely to engage in unprotected sex compared with any other population group, and evangelical Christians were also less likely to engage in unsafe sex compared to nonreligious populations and non-Christians. However, although African Americans tend to be more devout Christians with higher church attendance,

HIV rates are higher among this population. Researchers of past studies focused on HIV-positive gay men have found that the majority of this population report safe sex to protect their partners. This supports the notion of religiosity and religious teaching providing a protective effect, especially when the focus is on moral and ethical concerns for others rather than on abstinence.

Opayemi (2011) evaluated the role of religion in combating the spread of HIV within Nigeria. The rise in sexual activity among Nigerian youth has spurred a proportionate rise in STDs and abortion rates. More than two thirds of births with mothers under 18 years of age are unintended, and this is also the case with one half of the births with mothers between 18 and 19 years of age. Throughout Africa, premarital sex was taboo and subject to mild or severe punishment. Abstinence until marriage was the cultural mantra and some African tribes prized female virginity at marriage. This has gradually changed and premarital sex is now more common throughout the country. Opayemi suggested that causal factors include parental care, the changed social environment, peer pressure, lack of personal responsibility, liberal secularism, and inexperience with the use of contraceptives. He found that religiosity influenced attitudes toward premarital sex, and there is also an interaction between religiosity and gender. This is possibly due to the notion that African males believe they are the dominant gender, which promotes variant attitudes toward male and female virginity.

Religiosity in women may be partially associated with an acceptance of their traditional subservient role. Opayemi (2011) found a relationship with the type of



secondary school attended, with church or mosque attendance contributing to a reduced likelihood of premarital sex. He argued that Africans have a strong belief in the afterlife, and religion is an essential facet of life. Therefore, this population group is more likely to follow religious teachings than many other cultures, supporting the idea of religious teaching discouraging premarital sex.

Muula (2009) investigated HIV in a sample residing within Malawi, Africa where HIV has been diagnosed at a rate of between 12% and 14% of the adult population. The women living in rural areas have particularly high rates of HIV. Muula related this incidence to lower socioeconomic status and a lack of sexual control among the female population, primarily due to family duties, cultural norms, patriarchal societal bias, and religious practices. Overall, the Pentecostal Christians participating in the Muula study reported less extramarital activity than nonreligious participants, while a 45% drop in extramarital activity was indicated among Catholics and those reporting high church attendance. Anglican and Muslim women had the highest HIV rates within Malawi. Muula found that HIV-positive individuals are often blamed for their condition and perceived to be undergoing “divine punishment”; others are warned to take precautions in their presence to avoid infection.

There is danger in the belief that religion renders believers invulnerable to the adverse effects of risky sexual behavior. However, religious individuals may still be less likely to engage in extramarital sex or use prostitutes because they fear condemnation if discovered. Highly religious female adolescents in Gambia were found to be less likely to engage in risky sexual behavior for this reason (Hassett, 2009; Muula, 2009). Overall,

religiosity could play a role in reducing such behavior, but social support, such as living within a family village, was also found to be important.

Smerecnik et al. (2010) conducted a study of Muslim immigrants within the Netherlands and suggested that religion could provide protection against sexual risk taking, but this conclusion would need to overcome existing challenges. Overall, the study findings indicated that sexual education for Muslims must adapt to meet the sexual rigidity of much of the population. The notion of using Imams (i.e., Muslim religious leaders) for sexual guidance could also be problematic because their authority can be challenged. Muslim males are more likely to engage in premarital sex; consequently, it is important to discuss contraception and STDs during sexual education. However, teaching values regarded as non-Muslim may marginalize Muslim girls and even cause them to withdraw from classes. It is also important to engage parents because Muslims tend to place greater emphasis on parental wisdom and guidance than on structured education. Overall, religious practice and religiosity are related to both marriage stability and sexual behavior. As a result, religion can be used to educate Muslim adolescents on the consequences of premarital sexual activities (Ahmadi & Hossein-Abadi, 2008).

It is possible to conclude that religiosity can be protective in nature; however, this is not universal because it blends with many other factors. For example, the doctrine practiced by individual denominations is integrated with the socialization of youth within this religious context. Modern youth do not appear to hold religious views as strongly as prior generations, and it is important to understand that religiosity is not the only protective factor (Brennan & Mroczek, 2003; Haglund & Fehring, 2009). For example,

stable families and positive peer groups are also associated with less risky sexual behavior in adolescents from religious families. Parents who develop strong relationships with their children and monitor them as they undertake routine activities can contribute to reduced risky sexual behavior in their children, regardless of the familial level of religiosity. Families can not only influence the sexual behavior of youth, but also their use of contraceptives when abstinence is not adopted (Manlove, Logan, Moore, & Ikramullah, 2008). Consequently, although religiosity may have a protective effect, it is not essential if other social, cultural, and parental factors are in place. Negative effects of religion are also evident such as lower contraceptive use among males within religious families, possibly due to the social stigma surrounding the purchase of contraceptives.

### **Religiosity, Sexuality, and Gender Differences**

Existing related research supports the notion that religiosity presents greater behavioral influence for women than men (Beit-Hallahmi & Argyle, 1997; Collett & Lizardo; 2009; de Vaus & McAllister, 1987; Francis, 1997; Krause, Ellison, & Marcum, 2002; Miller & Hoffman, 1995; Walter & Davie, 1998). Several researchers have found that women demonstrate a higher degree of religiosity within a broad holistic context, as opposed to men, and that this strong adherence to religious beliefs, in turn, presents a stronger influence over their sexual behavior (Collett & Lizardo; 2009; Miller & Hoffman, 1995; Walter & Davie, 1998). Specifically, women tend to display a higher degree of religiosity than men among certain faiths such as Christianity, Buddhism, and Hinduism (World Values Survey Organization, 2009). Sullins (2006) found that the connection between religiosity and gender is not universally associated and that it is

Islam, Jewish, and Muslim men who demonstrate a higher degree of religiosity compared to their female counterparts. He further argued that gender differences account for a larger participatory level of affective religiousness or interpersonal piety, as opposed to active religiousness or formal participation with organized or structured religious groups. Potential variances exist in terms of the definition of religiosity inclusive of affective religiousness versus active religiousness.

Causal factors for gender variance in religiosity and sexual behavior are thought to include gender socialization, which within many cultures, reflects male behavior that is more competitive and aggressive and with a higher emphasis on individualization than is evident in female behavior. Female behavior is typically more nurturing and submissive, with less emphasis on individualization (McFarland, Uecker, & Regnerus, 2011; Regnerus, 2011). Given the more subservient role of women on a cross-cultural basis, it could be argued that this implicit obedience may contribute to explaining why women may be more prone to religiosity, given that many values of religiosity support a subservient and obedient role to the selected deity of worship (Beit-Hallahmi & Argyle, 1997). Various sociocultural explanations have been documented for this phenomenon including innate variances in personalities between genders (Feltey & Paloma, 1991; Francis, 1997; Miller & Stark, 2002; Stark, 2002; Sullins, 2006; Walter, 1990); in gender orientation (Francis & Wilcox, 1996, 1998; Piedmont, 1999b; Saroglou, 2002; Taylor & MacDonald, 1999; Thompson, 1991); and in gender-role socialization (Levitt, 1995; Sullins, 2006). Structural determinants and location have also been considered predictive

of a propensity for higher religiosity among women compared to men across cultures (Cornwall, 1989; de Vaus, 1984; de Vaus & McAllister, 1987).

Sexual satisfaction is an issue for both men and women, and it increasingly plays a role in individual well-being and relationship building. Sexual satisfaction can be related to both past experience and future aspirations and is extremely individual in nature. The majority of related research has indicated that religiosity has very little direct effect on sexual satisfaction (Davidson et al., 1995). However, because male satisfaction is often emphasized in both religion and culture, largely because male orgasm is essential for procreation, exploring the link between religion and sexual satisfaction is especially important for women and is a major component of modern feminist thought. Historically, many Christian denominations have not considered the sexual satisfaction of women and this imbalance endures. Not all women find intercourse alone pleasurable, and the lack of emphasis on both partners in the effort to reverse this scenario can be problematic (Hunt & Jung, 2009).

The majority of existing research into sexual satisfaction has been conducted with an examination of the issue from both medical and psychological perspectives, which tends to overlook the desires of women because these disciplines traditionally present male viewpoints. Women have historically been viewed as less sexual than men or more interested in the emotional aspects of sex. However, researchers considering emotional well-being, intimacy, and spirituality have conducted more productive investigations into the link between religion and sexuality (Smith & Horne, 2008). One very important aspect is how religious guilt affects sexual satisfaction in women.

An alternative and more recent theoretical orientation from which to explain lower religiosity among men compared to women is risk-aversion theory (Miller & Hoffman, 1995; Stark, 2002). This theory suggests that, because men are more apt to engage in risk-taking behavior in various forms than are women (Gottfredson & Hirschi, 1990; Hagan, 1990; Miller & Hoffmann, 1995), nonadherence to religious ideologies may be present in the form of societal risk-taking behavior, particularly within cultures that practice a heavy emphasis on religious membership. In accordance with risk-aversion theory, a more pronounced gender gap would be expected within these cultures, given that the greater the importance placed on religion, the greater the degree of risk in practicing unaccepted or nonparticipatory behavior. Risk-aversion theory was expanded upon by Collett and Lizardo (2009) who drew upon early tenets grounded in power-control theory (PCT), which was developed by Hagan, Gillis, and Simpson (1990). Socialization served as a potential explanation for gender variances in religiosity.

An interesting theoretical paradox is presented with women engaging in more historically male-dominated professions, sociocultural positions, and familial roles. It is unclear why a more pronounced shift toward secularity has not occurred in this population. The alternative theoretical position of PCT assumes an association between power-based relationships outside the home and the variances of social control with children within the household—specifically, social-control variances between males and females (Hagan, McCarthy, & Foster, 2002). The control manifests in an instrument-object form with the males and females in the household; the individual known as the primary socializer, in effect, serves as the social-control instrument. Variances in the

extent of social control are thought to correlate with individual preferences for risk among the males and females. PCT was originally developed within the field of criminology to help explain gender variances as they relate to juvenile delinquency (Collett & Lizardo, 2009). Because delinquency served as the original theoretical focus, crime was thus one of the primary examples of high-risk behavior (Grasmick, Hagan, Sims-Blackwell, & Arneklev, 1996). PCT then provides a theoretical framework through which behaviors related to socialization are linked to gender variances in risk-taking preferences.

In dominant religious traditions, such as Christianity, Judaism, or Islam, a lack of religiosity is often perceived as a form of risk taking. It is typically met with severe and eternal consequential threats in the perceived afterlife such as eternal damnation and “hellfire” (Liu, 2010; Malinowski, 1925; Yates, 1992). Conversely, religions that do not emphasize strict individual adherence or loyalty to any related church doctrine and lack punishment for nonparticipation in religious practices, are perceived as low risk (Feuchtwang, 2001; Liu, 2010; Stark, 2004). Applying PCT to religiosity may enable researchers to explain gender variances. Unfortunately, minimal empirical research has been conducted on risk preferences as a correlate of individual religiosity (Miller, 2000; Miller & Stark, 2002).

## **Adolescent Sexuality**

### **Religiosity**

Because adolescents are particularly at risk for unwanted pregnancy, STDs, and psychological damage, many studies have been conducted with a concentration on

religion and sexuality within this unique population. Of particular interest are questions pertaining to the dangers posed by adolescent sexuality and how religion can support sexual education and provide protection against dangers. During the 1990s, the United States experienced an increase in risk-taking sexual behavior among adolescents and young adults (Burris et al., 2009; Levesque, 2000). Despite a slight decline during the 2000s, rates remain much higher than within many other developed nations. On college and university campuses, 80% of students have experienced intercourse, 25% have had more than six sexual partners, 70% have engaged in sex without a condom, and a small minority were found to take regular precautions against pregnancy and sexually related disease.

In 2000, adolescents and young adults comprised one quarter of the sexually active population within the United States, while over 9 million of this population accounted for new cases of STD and 20,000 of new HIV cases (Galvan et al., 2007; Haglund & Fehring, 2009). College students often believe that STDs will not affect them, and most have engaged in condomless sex, with some using condoms in less than 50% of their sexual encounters (Penhollow et al., 2005). Davidson et al. (2004) found that few women regularly question sex partners regarding STDs. Risky sexual activities led to 780,000 pregnancies for girls between 10 and 19 years of age, and 30% to 40% of these resulted in abortions. It is unclear whether any significant difference existed between genders; however, religiosity appears to play a major role.

Penhollow et al. (2007) researched the “hooking up” phenomenon among young adults, which is a term for sexual activity free of emotional commitment. An estimated



64% of males and 47% of females participating in their study reported hooking-up behavior. The practice has been normalized to a certain degree by social media and cell-phone applications such as Tinder and Grinder. The growth in casual sex may be partially explained by the fact that college academic work, jobs, and finances leave minimal time for the development of relationships. Additionally, one or both partners may view the behavior as the first step toward building a relationship. Hooking up provides young adults with sexual experience, but it does not facilitate learning in how to properly build and maintain relationships. Interestingly, women from divorced families are more likely to hook up, and 81% of the Penhollow et al. study sample who had hooked up used condoms.

### **Substance Abuse**

Alcohol intake or the use of mind-altering substances represents another area with a strong correlation to sexual coercion, a highly problematic phenomenon within the United States. College students are more likely to drink than other populations and twice as likely to drink excessively (Ginn et al., 1998). Surveys have delivered disturbing statistics related to sexual coercion; three quarters of surveyed women and nearly one half of responding men have reported they were targets of coercive attempts. Just over one half of the men who admitted sexual assault had been drinking, as had nearly three quarters of the assaulted women. Students from religions preaching abstinence were less likely to drink than students from other denominations, and high religiosity was linked to reduced drinking. However, this is not a clear correlation and Ginn et al. (1998) found that high religiosity did not reduce consumption among Bible belt students. However, the

university that participated in the Ginn et al. study was located in proximity to an area where alcohol was readily available. Davidson et al. (2004) noted that religious women may be less likely to binge drink or engage in risky sexual behavior.

Racial variances have also drawn interesting correlates. Among the African American community, marijuana use is an issue because it lowers sexual inhibitions, leading to risky sexual behavior. African Americans accounted for nearly three quarters of the heterosexual HIV diagnoses in 2004, and 1 in 500 African American college students may carry the HIV (Poulson, Bradshaw, Huff, Peebles, & Hilton, 2008). Poulson et al. (2008) surveyed students attending a primarily African American college within North Carolina to determine whether the traditionally high religiosity of African Americans may offer any protection from risky sexual behavior. Three quarters of the participants were sexually active, and the participating men were found to have had five or more sexual partners over the 12 months preceding the study. Data analysis revealed that marijuana and alcohol use positively correlated to sexual risk taking. Although many participants reported strong religious beliefs, this did not appear to offer any protection against risky sexual behavior or alcohol use, although it did predict a lower likelihood of marijuana use.

Risky sexual behavior has been linked to the early introduction of sexual intercourse (Galvan et al., 2007). Delaying even 50% of initial intercourse experiences could significantly reduce the number of adverse consequences. Consequently, many researchers are investigating correlations and predictors, attempting to find ways of

improving sexual education and raising greater awareness of the potential risks of premature sexual activity.

### **Contraception**

Longitudinal studies have been conducted to determine how family religiosity affects adolescent sexual behavior and the use of contraceptives by this population.

Manlove et al. (2008) found that, especially in female teen populations, high family religiosity is predictive of fewer sexual partners, consistent use of contraceptives, and later age at the initial sexual experience. This was found to be largely due to parental monitoring, strong parent-teenager relationships, and family activities.

Teenagers within religious families may be positively affected by teaching that discourages certain sexual practices and by religious values promoting positive family relationships (Harris et al., 2008). Haglund and Fehring (2009) examined how religiosity, sexual education, and the family structure influence the incidence of risky sexual behavior among a study sample of females and males 15 to 21 years of age. Those who reported religion as an important part of their lives, frequently attended church, and had sexual attitudes shaped by their religions were between 27% and 54% less likely to have experienced sexual intercourse and had fewer sexual partners. Study participants with formal and parental sex education that included abstinence were also less likely to have experienced sexual intercourse and had fewer partners. Adolescents who were highly religious were more likely to delay sexual intercourse, especially if they had friends and peers with a similar religious outlook. Religiosity has been found to be a restraining force against risky sexual behavior by strengthening attitudes adverse to premarital sex or

numerous sexual partners (Burriss et al., 2009; McDowell, 1963). Therefore, the inclusion of religion-based principles could strengthen the influence of sexual education within schools.

Smerecnik et al. (2010) investigated Muslim attitudes within the Netherlands with the goal of determining how the integration of Islamic values into Western secularism changed sociocultural views. These researchers found that non-Western immigrants experience higher rates of STD, which represents the need for urgent research attention. The Smerecnik et al. analysis indicated that Muslim adolescents share many of the same views as Christians concerning homosexuality, extramarital sex, abortion, and gender roles. The findings indicated that male and female Muslims frown upon premarital sex. However, male Muslims often view the ban on premarital sex as not applying to them as much as it does female Muslims, and the women of this culture seem to accept this double standard. Conversely, non-Muslim populations support the belief that gaining sexual experience before marriage is important to avoid later relationship difficulties.

Other factors affecting how religion influences sexuality are sexual education and prevalent attitudes toward sex throughout childhood. Attitudes can be ingrained when negative lessons are encountered during childhood, such as sexually dysfunctional parents ignorant of biology and sexual techniques, reinforcing feelings of guilt (Davidson et al., 2004). Children learn about sexuality from a number of sources including schools, peers, parents, and the media (Archibald, 2007; Frayser, 2003; Josephs, 2015). However, learning from peers and the media can be unreliable and lead to sexual risk taking later in

life. It can also serve to reduce sexual satisfaction when reality does not match expectations.

There is little doubt that sexual education in schools lowers the incidence of sexual risk taking and STDs. This leads to the need for critical analysis of the form(s) of sexual education that are the most effective and whether schools, society, or parents ultimately bear the responsibility for proactive sexual education. Sexual information delivered by parents can be potentially linked to religiosity and conservative sexual values. Parents play a lesser role than teachers or peers; however, research has shown that no parental communication regarding sexual issues can have a negative effect on well-being (Eisenberg, Sieving, Bearinger, Swain, & Resnick, 2006; Regnerus, 2005). The religious beliefs of parents can have a profound effect on the sexual attitudes and behaviors of youth, notably toward premarital sex, pornography, contraception, and homosexuality. There may also be an indirect influence on their choice of friends and dating patterns. Overall, parental religiosity, church attendance, and religious denomination could influence attitudes toward age of first intercourse and number of sexual partners (Manlove et al., 2008; Regnerus, 2005).

Future research into how adolescents develop attitudes toward sexual matters and sexual-socialization patterns would provide valuable data to the existing body of related knowledge. Investigators have suggested that adolescents primarily follow the religious beliefs of their parents and parental interpretation of a suitable age for introducing discussion surrounding sex and contraception. Regnerus (2005) suggested that, if parents demonstrate a high level of external, public religiosity, they tend to have fewer

conversations with their children on sexual issues and birth; however, they are more likely to discuss the morality of sex. Religious affiliation, age, ethnicity, and gender all play a role, but religiosity is the dominant factor. Conversely, Davidson et al. (2004) found that parents are viewed as a source of sex education more often than peers, which may be atypical. This finding may have been sourced in the fact that parents are now more comfortable discussing sex than has been the case among prior generations of parents. However, Davidson et al. reported that teachers remain the primary source of information related to contraceptives.

Some parents find sexual conversations embarrassing. Moran and Corley (1991) suggested that only one half of male youth discuss sexual matters with their parents, compared to 85% of females who tend to have conversations relating to primarily educational content. This imbalance may be due to the mother-daughter bond or to the consequences of pregnancy for girls. With regard to Islam, Smerecnik et al. (2010) found that young Muslims believe the views of their parents concerning the selection of a marital partner are important. In contrast, non-Muslims cannot understand how Muslim parents could condemn their child to an unhappy relationship or fail to approve of a relationship that brings their child happiness.

Parental guidance tends to shape the attitudes and beliefs of youth surrounding sexual issues, increasing emotional and physiological knowledge (Haglund & Fehring, 2009; McNamara, Burns, Johnson, & McCorkle, 2010). Regnerus (2005) found that parents were more likely to discuss the immorality of adolescent intercourse than its direct dangers via STDs and unwanted pregnancy. Other researchers have suggested that

the loss of respect and damage to emotions are often discussed, and the value of virginity is frequently instilled in girls. Other trends include age, with older mothers less likely to discuss sexual matters with daughters. Regnerus found that the likelihood of conversation related to sex and birth control declined with frequent church attendance. However, measures of personal religiosity indicated the opposite effect, with parents claiming to be religious reporting open discussion on such matters with their children.

Social norms play a role in the communication between parents and their children regarding sexual content. Religion has an indirect influence through church attendance, religious youth groups, and religious classes. Parents may have restrictive attitudes toward the sexuality of their children, but may find it difficult to talk openly on related social and emotional issues when their children reach sexual maturity. Regnerus (2005) suggested that women who received sex education from their parents and attend church weekly are less likely to experience orgasm. However, Davidson et al. (2004) advanced that women attending church once per year were more likely to experience orgasm during intercourse when their source of sexual information was their parents. Attitudes toward discussing the mechanics and emotions of sexual activity may be changing, especially among mother-daughter relationships; however, this may only be the case with less religious parents.

Subtle differences in sexually oriented conversation between parents and their children were found when this issue was examined among various religious denominations (Regnerus, 2005). Black Protestant and nonreligious parents are typically comfortable with such discussion, while Jewish, Protestant, Mormon, and Catholic

parents are uncomfortable with conversation regarding matters of sexuality with their children. Few parents of any denomination completely avoid such interaction. Mormons are the least likely to discuss birth control with their children but readily converse on matters of morality, as do Black Protestants. Jewish and nonreligious parents are also less likely to discuss matters of sexuality with their children. The emphasis on morality with religious parents, such as Mormons, is partially due to their perception of competing against an immoral, sex-saturated culture and their fear that discussing contraceptives with their children will actually encourage sexual behavior. Among Catholics, the idea of *machismo* (i.e., an enhanced sense of masculine pride), as well as immigration experiences, influence the role of Mexican mothers in the sex education of their girls. Parent-child discussions are less likely to be grounded in religious morality than the notion of virginity as a commodity that can be traded for marital and financial stability.

Religion plays a role in restricting premarital sex, but regardless, over one half of all adolescents and young adults will engage in the practice (Uecker, 2008). African Americans, despite high religiosity and open sexual conversation, are more likely to engage in premarital sex with an individual other than their future partner. Clearly, the message surrounding healthy sexuality has not reached much of this population. Part of the “disconnect” may be African American clergy who are reluctant to discuss sexual matters, allowing secular sexual messages to predominate. Hull, Hennessy, Bleakley, Fishbein, and Jordan (2011) examined whether religiosity delays first intercourse among adolescent populations, also examining the religious consequences of engaging in sex. The findings suggested that religiosity affects both coital and noncoital behavior. Hull



et al. reported minimal difference between occasional and frequent attendance in religious services.

An indirect contributor to sex education has a contextual effect. Religious individuals tend to be less sexually active when their surrounding religious environment frowns upon premarital sex (Uecker, 2008). Schaalma, Abraham, Gillmore, and Kok (2004) postulated that relevant social skills are integral to sex education, and such skills are partially drawn from the surrounding environment. When individuals are raised within strongly religious families, and the religious norms are reinforced by their local communities, they are more likely to abstain from premature sexual activity. Religious parents are more likely to live within a religious community and may send their children to faith-based schools, further reinforcing the message of abstinence (Uecker, 2008). This contextual effect is also related to differential exposure because a religious individual within a religious community may not have much opportunity for premarital sex. Pledging (i.e., promising sexual abstinence prior to marriage) may lead to earlier marriage, reducing the time available for premarital sex.

Politically and socially conservative Americans created the abstinence movement, which is a societal movement designed to encourage adolescents to pledge to refrain from all sexual behavior until marriage (Uecker, 2008). The movement now incorporates over 100 groups, and parents apply lessons learned from failed contraceptives, STDs, spousal gifts of virtue, and biblical teachings surrounding morality to encourage pledges from their children. Society must ask how pledging abstinence actually affects sexual behavior and whether it realistically reduces premarital sex.

Premarital sex remains fairly common even among religious individuals and those who have taken a pledge of abstinence. However, when premarital sex does occur with abstainers, it is more likely to be with their future spouse. Research has indicated that premarital sex with a future spouse presents similar rates of divorce as delaying sexual activity until marriage (Uecker, 2008). Pledging appears to be most effective when coupled with social control and differential exposure, sheltering individuals from situations where premarital sex may occur. The notion of abstinence affecting the incidence of premarital sex only with future spouses may relate to STD, unwanted pregnancy, and virtue as a gift, which lose importance when the partner is expected to be a future spouse. An alternative influence on premarital sexual activity pertains to social control because individuals may be aware of negative social consequences if they fail to uphold a related pledge, especially if they live within a religious community.

Studies have suggested that an abstinence pledge is effective for delaying sexual activity, even with religiosity considered; however, this is only true for non-Black adolescents surrounded by others who have also pledged abstinence. Individuals with a natural risk aversion and increased self-control may pledge abstinence, which renders a personality type the actual strength of the pledge (Uecker, 2008). Adolescents may engage in noncoital sexual behavior to avoid “technically” breaching their abstinence pledge (Uecker, Angotti, & Regnerus, 2008; Watterson & Giesler, 2012). Additionally, the effects of abstinence appear to reduce with age because older adolescents perceive that they have greater autonomy and may view sexual activity as a societal or cultural “rite of passage” (Ott, Pfeiffer, & Fortenberry, 2006). The most successful sex-education

programs within the United States mix abstinence with lessons on the importance of contraceptives. Abstinence appears to play a role in delivering successful outcomes; however, the exact mechanism is unclear (Regnerus, 2005). Haglund and Fehring (2009) found that adolescents exposed to abstinence-only teaching and those taught abstinence along with education in contraceptives have similar rates of premarital sex.

Ultimately, pledging may have an effect on reducing premarital sexual activity, but other contextual and social factors unquestionably play a role. A number of social and cultural factors likely influence overt acting out against sexual-education campaigns. It is reasonably safe to assume that religion provides a measure of protection against risk taking in young adults; however, spirituality may actually have the opposite effect. This may be especially true for individuals with numerous sexual partners (Burris et al., 2009). Regnerus (2005) posited that patriarchal religious sexual ideologies control sex-related behavior and attitudes; hence, religion-based sex education may also encourage discriminatory views. Overall, a relationship exists between religiosity and the introduction of sexual activity; consequently, an intervention grounded in religiosity, where appropriate, may be useful (Hull et al., 2011).

### **Sexual Practices**

A number of studies have been conducted with a focus on how attitudes toward heterosexual intercourse are influenced by religion, with a strong emphasis on premarital sex and suggested links between religiosity and the age of first intercourse (Davidson et al., 1995). Sheeran, Abraham, and Orbell (1999) found a negative relationship between religiosity and premarital sex, although the results were mixed. Young adults raised with

Protestant or Catholic traditions tend to be more sexually conservative and more likely to judge the sexual activities of others negatively. However, denomination was not as important as religiosity. Catholics were found to be more sexually active than the nonreligious control groups, which might be attributable to peer pressure or the notion of “guilty temptation.” The Catholic culture could also have been an influence due to the many communities emphasizing the expression of emotion and strong social bonds, especially within extended families. Close social networks may be precursors to early sexual intercourse.

Davidson et al. (1995) found that religious women experience few sexual encounters, are likely to be sexually inexperienced, and have few sexually active friends. On average, women who attend church frequently were found to engage in sexual intercourse and oral sex less than women who do not attend church. Building upon this research, Davidson et al. (2004) evaluated fundamentalist beliefs and religiosity, suggesting that fundamentalists are more likely to view premarital sex as wrong. Only 40% of the highly religious women who participated in their study engaged in sex prior to marriage, as opposed to between 75% and 81% of all the female participants. Nonreligious college women were found to be 2.8 times more likely to initiate sexual activity than Jewish women and 1.8 times more likely than Catholic women. Those attending church on a weekly basis were found to be more likely to maintain their virginity until marriage and to have more conservative views on nonprocreational activities than women who do not attend church. They are less likely to agree with abortion, view love as a crucial component of sex, and desire to marry virgin men.

### **Church-Member Populations**

Davidson et al. (2004) reported that women attending church weekly tend to abstain from premarital intercourse due to religious beliefs and the avoidance of guilt, whereas women attending church monthly or annually refrain due to fear of pregnancy. Barkan (2006) assessed whether highly religious adults who have never married have fewer sexual partners than less religious individuals. These researchers also investigated the belief among their sample that premarital sex is wrong to determine whether this perception influences the number of sexual partners. Religiosity appeared to negatively affect the number of sexual partners, and the belief that premarital sex is morally wrong was present in 50% of the responses. Farmer et al. (2008) also found that fundamentalism is linked to reduced sexual activity in women.

Visser et al. (2006) surveyed Australian students of various faiths, comparing these groups with nonreligious peers to examine the relationship between religiosity and sexuality. Sexuality was analyzed in relation to religious denomination, self-assessed religiosity, and church attendance. The findings indicated that frequency of church attendance correlates with more conservative beliefs surrounding sexuality. Religious individuals are less likely to engage in premarital intercourse; however, minimal difference was found between study groups in the number of sexual partners. Frequency of church attendance influenced this finding, with individuals attending church less often than once per month demonstrating very similar sexual behavior to nonreligious individuals. In contrast, those attending more often than monthly displayed more conservative attitudes toward sexuality and sexual behavior. This suggests that religions

exert a degree of control over participants, and individuals attending religious services more regularly are likely to absorb religious teachings surrounding sexuality.

The strongest link found by Visser et al. (2006) was between religiosity and premarital intercourse. It is possible that, because losing virginity is sexual behavior of primary importance, religion may prove a particularly strong influence. Overall, attitudes and behavior related to sexuality were found to be similar across genders; although, among the participating men, the incidence of premarital sex and homosexuality was less for Christians who frequently attended church. Premarital sex for women was found to be related to intrinsic religiosity and less dependent on the frequency of church attendance.

### **Married Populations**

The relationship between religiosity and marriage quality has also been the focus of past research (Call & Heaton, 1997; Lehrer, 2004; Wilcox & Wolfinger, 2008). In many cultures, societal norms are viewed through a “lens” of centuries of religious doctrine and interpretations. For Christianity, the link between chastity and virtue was first espoused by early Christian philosophers (Cowden & Bradshaw, 2007). Thomas Aquinas promoted the notion of sex solely for procreation, an idea reinforced in the late 20<sup>th</sup> century by the Vatican. Saint Paul advised married men to remain celibate in preparation for the end times, viewed women as temptresses, and disapproved of sex solely for pleasure. Saint Jerome believed that a man committed adultery if he engaged in passionate sex with his wife, and Saint Augustine maintained that sex was animalistic and should be reserved solely for procreation (Davidson et al., 1995).

Across existing related literature, all religions regard the marriage vow as sacred. Balakrishnan and Chen (1990) found divorce rates of 10%, 19%, and 33% among populations practicing regular church attendance, sporadic attendance, or rarely attending religious services. Catholics are less likely to divorce; however, this may be due to their cultures and/or family structures. Catholics who do not attend church were found to be as likely to divorce as regular attendees.

Ahmadi and Hossein-Abadi (2008) examined the influence of performing Islamic duties on marital satisfaction with a sample residing within Iran. These researchers suggested that families with higher participation in religious traditions and ceremonies are happier, with higher relationship satisfaction and strong parenting skills. They concluded that religiosity provides a good foundation for raising a family in line with Islamic beliefs and cultivating a marriage built upon equality, friendship, and love. However, this mind-set evolved into the notion of sexual pleasure as a sin incurring guilt and celibacy as holy (Cowden & Bradshaw, 2007; Davidson et al., 2004). Such restrictive views continue to pervade Christian thought; although, most Christian denominations have progressed beyond the idea of sex solely for procreation, with only a few pursuing asceticism. Regardless, a remnant of these views is still ingrained within many Christian-dominated cultures (Bernstein & Jakobsen, 2010; Davidson et al., 1995). Strong religious beliefs remain linked to more conservative sexual attitudes and behaviors, with religious individuals less likely to explore unconventional sexual experiences.

## **Celibacy and Contraception**

Abrahamic religions tend to discourage sex outside marriage and all oppose abortion, while Catholicism forbids the use of contraception (Visser et al., 2006). Davidson et al. (2004) conducted a study of unmarried college women and found that attitudes toward sex for pleasure, rather than procreation, vary according to church attendance. The findings indicated that high attendance suggests more conservative attitudes toward oral, vaginal, and anal sex, as well as guilt in relation to sexual behavior. Davidson et al. concluded that, because oral sex is not for procreation, some religions disapprove of the practice. Women claiming no religion or membership in a liberal denomination were found to be more likely to engage in the practice.

Religious views regarding sexuality are often drawn from a patriarchal perspective, with women frequently held to different moral standards than men and expected to be pure and chaste as the “keepers” of sexuality (Hunt & Jung, 2009). Women are rarely involved in the creation of religious traditions, which has serious implications for women’s rights. Such patriarchal views do not always support women’s health and well-being, and religion can be used to reinforce the cultural and political oppression of women. The cost of sexuality falls primarily upon women who can be coerced into sex or subjected to “honor killings” and public shaming for expressing their sexuality (Hunt & Jung, 2009; Sultana, 2012).

In Western societies, a sexually active woman may be stigmatized while a sexually active male is celebrated. Sexuality in women may be linked to the patriarchal notion of women as submissive to men and their sexual pleasure, even when the sexual



pleasure is viewed as deviant by women. Birth control may be forbidden, forcing women to become mothers with the major responsibility for raising children (Hunt & Jung, 2009; Sultana, 2012). Some religious and cultural traditions force women into arranged marriages, subjecting them to domestic violence or bearing shame if they are raped. Because religion is embedded deeply within the historical context of many political systems, this can be detrimental to female issues such as abortion, sexual health, and contraception (Bernstein & Jakobsen, 2010; Hunt & Jung, 2009; Sultana, 2012).

Religions including some denominations of Christianity are quite liberal in their viewpoints toward sexuality (Visser et al., 2006). Since the late 1970s, a shift has been evident in attitudes as societies have become more secular in nature (Ahrold et al., 2011). Balakrishnan and Chen (1990) used data from 1984 to further investigate attitudes toward sexuality within Canada because religion was becoming less relevant to reproduction, marriage, and sexuality. Surveying 5,315 women of prime reproductive age, these researchers found that, when using church attendance as a measure of religiosity, a strong negative relationship exists between premarital cohabitation, divorce, fertility, and contraceptive use. However, Balakrishnan and Chen noted that this negative correlation is gradually changing.

Other religions have their own unique outlooks on religion and sexuality. Although the Western perception of Islam is that it is a monolithic religion, there are many regional and cultural differences in this viewpoint. The education of Islamic women, polygamy, the seclusion of women, and the religious attire expected to be worn by women are subject to cultural, societal, and political norms (Badran, 2013; Hunt &

Jung, 2009). Practices attributed to Islam are not universal, but are used by extremists to promote one perspective over others as a political rather than religious vision (Hunt & Jung, 2009). For example, female genital mutilation, which is often associated with Islam, is highly regional in practice. Other religions, within specific geographical areas, also engage in this practice, while some Islamic countries strictly forbid such abuse.

### **Shaming**

Female honor, submission, and shaming practices are common throughout the Middle East and the Indian Subcontinent among most religions, but are unknown among Muslims in sub-Saharan Africa and Southeast Asia (Hunt & Jung, 2009). Islam does not often promote the idea of sex as a tool solely for procreation, and men may be actively encouraged to ensure that women experience full sexual satisfaction (Bouhdiba, 2013; Hunt & Jung, 2009). Islam has many rules governing sexual behavior, but they are more spiritual in nature than similar Christian beliefs and are not focused on sex as procreation. However, this is within the context of legitimate marriage because sex outside marriage is viewed as socially unacceptable with female virginity valued (Smerecnik et al., 2010). Although Jewish script expects men to pleasure their wives, this is grounded in the view of women lacking sexual self-control and requiring an outlet for their innate sin (Hunt & Jung, 2009).

It is often assumed that many Eastern traditions, such as Buddhism, are more open and accepting of sexuality than Western religions. Visser et al. (2006) noted that Buddhism appears to have less stringent controls on sexual behavior. However, one Buddhist tradition suggests that mature individuals avoid sex as an element of their

spiritual journey and, although pleasurable sex is not discouraged for laypeople, it can be seen as a worldly attachment that is dangerous for those travelling a spiritual path (Hunt & Jung, 2009). Although Buddhism has few strict rules regarding sexual behavior, Buddhist ethics tend to frown upon extramarital sex, abortion, and pornography. Buddhists may not be as homophobic as those committed to Western religions, and marriage is not a recognized ceremony within the Buddhist faith (Visser et al., 2006). Conversely, many studies conducted within the United States indicate that Buddhists tend to be sexually conservative; although, this may be related to the Southeast Asian culture more than religiosity in general (Ahrold et al., 2011).

### **Nonreligious Populations**

Although nonreligious individuals have often been studied as a single group (Ahrold et al., 2011; Smith, 2012; Smith & Horne, 2008), many subtle differences are evident among those comprising this population in terms of attitudes toward sexuality. For example, agnostics are likely to display conservative sexual attitudes, whereas the attitudes of atheists may be less distinct from religious individuals. A causal factor may be that many atheists were raised within religious families and societies; hence, they may hold to some ingrained values from their past environments (Ahrold et al., 2011; Smith, 1979). Agnostics and atheists have similar views surrounding female sexual fantasy, perhaps because such fantasy is regulated through religious teachings rather than being considered an internal, personal view (Ahrold et al., 2011). Many religious traditions seek to oppress women as a facet of a patriarchal structure (Hunt & Jung, 2009). The notion of a patriarchy is a wider issue than religion alone, and similarities exist between how

religion and other systems treat female sexuality. For example, capitalism can control sexuality by commoditizing sex and advertising how women should express their sexuality (Brenner, 2003; Hunt & Jung, 2009).

### **Religiosity, Contraception, and Abortion**

One important aspect of sexuality that can have severe consequences is the use of contraception due to the risk of STDs and unwanted pregnancy. The issue has been complicated by the historical beliefs and campaigns of right-wing politicians. Since the politics of Ronald Reagan during the 1980s, the Republican party has engaged with conservative evangelical Christians to focus on conservative policies “wrapped” in religious doctrine. Gender and sexuality have been at the forefront of this ideological battle, with the U.S. government even linking foreign aid to the restriction of sexual and reproductive freedom for women within developing countries (Bernstein & Jakobsen, 2010). President G.W. Bush (as cited in Bernstein & Jakobsen, 2010) appealed to Catholics by incorporating strong condemnation of abortion and contraception into the Republican manifesto.

Davidson et al. (1995) found that 95% of women, including Catholics, desire the capability to control or regulate pregnancy; hence, race, religion, and level of income do not significantly influence this belief. The frequency of church attendance was found to negatively influence contraceptive use more than religious denomination. Individuals with less religiosity are likely to use oral contraceptives or intrauterine devices, and sexually active women with a higher frequency of church attendance are less likely to use contraceptives in favor of less effective methods such as withdrawal. Burris et al. (2009)

also noted that contraceptive use is not particularly related to denomination; religiosity was found to be the dominant predictor variable. Conversely, Davidson et al. (2004) reported that high religiosity correlates with higher incidence of condom use, possibly because the consequences of pregnancy or a STD are more severe for religious women. This suggests that religious attitudes toward contraception may, in fact, have changed or evolved since the 1990s.

Another influence on the use of contraceptives is the factor of spirituality. Burris et al. (2009) examined how spiritual beliefs in young adults affect the frequency of sex, the number of partners, and the use of condoms. Of 353 respondents, of whom 61% were female, spiritual women tended to have a higher number of sexual partners and were less likely to insist upon the use of condoms, even with consideration to religiosity. Men scoring high in spirituality were actually less likely to engage in vaginal intercourse. Ultimately, although religious individuals appear to be more accepting of contraception within a contemporary framework, spirituality may actually work against this progressive trend.

With regard to abortion, the findings of an Australian study conducted by Visser et al. (2006) indicated that Catholic women who attend church services at least monthly are less likely than nonreligious women to have terminated a pregnancy. This was not entirely unexpected because, although all of the religions studied opposed abortion, the strong views of the Catholic Church are well documented in related literature (Bartkowski, Ellison, Ramos-Wada, & Acevedo, 2012; Jelen & Wilcox, 2003; Morgan, 2013; Ruether, 2008). However, data drawn from Catholic women attending church less

than once per month differed minimally in this regard with the data collected from nonreligious women, possibly due to the general belief that frequent church attendance is likely to result in internalized religious teachings (Visser et al., 2006). This may also reflect the changing attitudes of Catholics. During the 1950s and 1960s, Catholic fertility was higher on average when compared to Protestants and those of other religions (Balakrishnan & Chen, 1990). However, surveys from 1970 forward have shown that fertility rates are converging, with Catholic fertility declining at a rapid rate. This suggests that Catholic women are increasingly using contraceptives. Within the Netherlands, Smerecnik et al. (2010) found that Muslim adolescents tend to attribute unwanted pregnancy to the mothers, blaming them for not anticipating the consequences before acting upon their desires.

### **Sexual Risk Taking and Fantasy**

Researchers (as cited in Baier and Wright, 2001) have suggested that religiosity is best measured using multiple dimensions inclusive of religious activity (i.e., attendance at religious services, reviewing religious material, or listening to or watching religious-based programming); religious salience (i.e., the degree to which religious beliefs impact the daily lives of individuals and the extent of religious influence on daily life); and doctrine referred to as “hellfire beliefs” within the research realm (i.e., specific beliefs in deity-based sanctions as punishment for a lack of adherence to specific religious precepts). Increased religiosity reflective of attendance at religious services, in addition to individual prayer or meditation, are associated with delayed sexual behavior including, and more commonly, sexual intercourse (Kirk & Lewis, 2013; Halpern Waller, Spriggs,

& Hallfors, 2006) and reduced premarital sexual behavior (Barkan, 2006; Bryant, Choi, & Yasumo, 2003).

Research pertaining to sexual behaviors and possible religious influences among adults is limited because the majority of related literature focuses on adolescents and tends to support a negative association between elevated levels of religiosity and expressed sexual behaviors (Kirk & Lewis, 2013; Regnerus, 2005; Rostosky, Wilcox, Wright, & Randall, 2004; Uecker, 2008). International studies have demonstrated the influence of religiosity on risk-taking behaviors in general, inclusive of sexually based behaviors (Abbott-Chapman & Denholm, 2001; Giddens, 1991). Empirical data support a relationship between religious influences and teachings and the expressed sexual behaviors of followers. Laumann et al. (1994) conducted a study that demonstrated the influence of religion on individual behaviors and attitudes toward sexuality both preceding and following marriage. Those individuals participating in the research who professed a religious affiliation were found to be less likely to think about certain types of sexual behavior inclusive of masturbation, sexual activities with multiple partners, and anal or oral sex. However, they were also less likely to participate in such sexual behaviors. Laumann et al. reported that adult evangelical Protestants are the least likely to engage in anal and oral sex while expressing the highest sexual-satisfaction rates.

A questionnaire known as the General Social Survey was administered by Barkan (2006) from 1993 to 2002. The results supported a relationship between religiosity and expressed sexual behaviors. The adult respondents who had never been married and who presented with reports of high religiosity also reported fewer sexual partners compared to

the single adults with lower levels of religiosity (Barkan, 2006). The survey was administered again between 1988 and 1996 and it was found that heightened religiosity resulted in a reduction in reported incidents of premarital sexual activity among individuals who self-identified as conservative Protestants and Catholics. However, the rate of incidence did not fluctuate among individuals who self-identified as moderate or liberal Protestants (Cochran, Chamlin, Beeghley, & Fenwich, 2004).

With regard to masturbation, Davidson et al. (2004) suggested that most religions discourage the practice; consequently, higher religiosity was found to lead to lower masturbation frequency and higher levels of associated guilt. These researchers found that women following no religion, or who were members of a liberal denomination, were more likely to masturbate, more likely to reach orgasm, and experience less guilt. Conversely, the participating women with the most guilt surrounding masturbation were the most likely to engage in the practice, possibly because it is their only sexual outlet. This supports the Degomez (2011) finding of highly religious men using online pornography more frequently than nonreligious males. Cowden and Bradshaw (2007) found that individuals identifying as Quest members did not report feelings of sexual guilt with masturbation nor with seeking sexual pleasure. Within the Netherlands, Smerecnik et al. (2010) found that non-Muslims consider masturbation normal and healthy, while many Muslims consider it a form of adultery and therefore forbidden.

Guilt can be a powerful influence on self-esteem, and violating deep-rooted religious or moral principles can lead to psychological distress. In terms of sexuality, guilt can encourage some sexual behaviors and discourage others such as refusing to use



condoms due to religious teachings. Women may report guilt as the primary reason for lack of satisfaction with their first experience of sexual intercourse, and shame can be at the root of not engaging in masturbation (Davidson et al., 2004). A review of related literature by Davidson et al. (1995) indicated that women who attend church more frequently are as likely to masturbate as nonreligious women, but with a concurrent experience of guilt, possibly due to overriding religious messages that sexual activity should only be with a loving partner rather than an activity for self-gratification.

Hunt and Jung (2009) hypothesized that sex can be particularly satisfying when it is a guilty pleasure. Davidson et al. (1995) posited that highly religious women may actually be more likely to experience orgasm during intercourse; however, they are less likely to masturbate or engage in anal or oral intercourse. Conversely, these researchers also suggested that rigid religious interpretations and a reliance on dogma can create guilt and serve to lower sexual interest and frequency. Davidson et al. found no difference in physiological and psychological arousal with increased religiosity, indicating that any relationship between sexual satisfaction and guilt is complex and difficult to define.

In terms of contraception, Davidson et al. (1995) found that women with high religiosity are more likely to engage in partner-initiated methods or sterilization. This is possibly due to religious guilt from handling genitals or the notion that contraception use is in opposition to the teachings of the church. Women attending church less frequently were found to experience a higher level of guilt if they did not orgasm during sex. This may be due to their expectations of orgasm during intercourse or a sense of obligation to show pleasure to their partners (Davidson et al., 2004).

Historically, research findings have broadly supported the notion of religiosity leading to more permissive sexual attitudes and behaviors. Studies on specific concepts, such as sexual fantasy, are scarce (Ahrold et al., 2011). Sexual fantasy includes erotophilia, which consists of negative views of sex and less use of sexual fantasy; erotophobia is the opposite trait. Sexual fantasy displays similar psychological aspects as attitude toward sexuality and both may be affected by religion. Nicholas (2004) studied a sample of young Christians and found that those who were more religious were more likely to fantasize about heterosexual intercourse but had less actual experience. Conversely, Ahrold et al. (2011) found a difference between religious and nonreligious women, with atheists and agnostics more likely to report sexual fantasies. Evangelical Christians who tend to be fundamentalists report negative views of sexual fantasy. For women, high paranormal and spirituality beliefs, coupled with low levels of religiosity, predict a greater likelihood of sexual fantasy. Spirituality may lower or raise fantasy, and intrinsic religiosity does not always represent an accurate measure of sexual fantasy.

If religious individuals are more likely to have sexual fantasies, but disapprove in the practice more strongly than nonreligious populations, further research exploration into whether this can lead to guilt and emotional distress is indicated. Wetterneck, Smith, Burgess, and Hart (2011) studied sexually intrusive thoughts and any subsequent related emotional distress. Such thoughts are sexual fantasies that can become obsessive or instill a self-destructive sense of guilt linked to religiosity. An estimated 93% of the participants in the Wetterneck et al. study reported sexually intrusive thoughts but the majority were short lived and only became repulsive and/or distressing among a minority of the sample.

These researchers found no sign of a link between the distress caused by sexually intrusive thoughts and religiosity or denomination; emotional state presented a much stronger relationship.

### **Religious Paradigm Shifts**

An important aspect of incorporating religion into therapy and sex education is adjusting religious tenets from within to soften the more discriminatory and judgmental aspects without losing the benefits. This involves promoting a more personalized, internal message. Neyrinck et al. (2006) noted that religious faith and practices are a major constituent of most cultures, and ideas such as compassion and love are typically matched to personal and internal values that can be shaped by societal and cultural norms. Individuals frequently approach religion with a closed mentality, taking scripture literally and refusing to deviate, viewing any alternative perception as a personal attack on their religious values. By contrast, those approaching religion in a less literal manner apply it as a spiritual and psychological framework and are more willing to change their individual perspectives. Neyrinck et al. found that a Belgian sample who emphasized an internal and personal significance to their religious beliefs, tended to be more flexible toward accepted Christian doctrine. Catholics within Mexico were found to adopt their own interpretations of scripture to support condom use, and many different interpretations justify contraceptives within Islam traditions (Balakrishnan & Chen, 1990).

Spirituality serves as a powerful method of positive internal change by promoting the acceptance of individual perspectives and sexual orientations, gender equality, and

the practice of love as a transcendent force. Teaching youth to accept their sexuality has been more successful with a focus on spirituality (Ahrold et al., 2011). Spirituality may provide a way for women to rebel against the gender-imbalance of the majority of religions. This is a balance that must be effectuated because spirituality could override the protective function of religion and encourage risky sexual behavior. This is an important area for future study, especially within the field of psychological therapy and sex education. Non-Western societies are undergoing a process of desecularization, with religion becoming more spiritual and personal in nature. Sexuality can certainly be treated as a secular issue, which creates few problems as long as the views of women are considered (Reilly, 2011). Religion is embedded in the lives of many women, and engaging religious leaders can ultimately serve to promote their sexual health and well-being (Hunt & Jung, 2009). Most religious traditions focus on what followers should not do with respect to sex, and this unbalanced view of sexuality does not recognize the influence of sex on other aspects of the lives of women and wider society.

When women contribute their interpretation of religion and their wisdom, the overarching society is healthier (Hunt & Jung, 2009). Hunt and Jung (2009) noted that the ideas behind sexual desire and satisfaction have a basis in the culture and wider society, as does religion, and it is important to avoid the presentation of independent views on sexual satisfaction. With the advent of technology, such as mass social media, the availability of pornography and its manner of portraying sex are becoming increasingly important. They may ultimately influence the practice of prostitution, honor killings, rape, and sex slavery, among other sexually based phenomena.

Many researchers have found that women are more likely to experience orgasm and heightened sexual satisfaction if they are within a happy, well-balanced relationship due to the greater emotional involvement (Heyman, Sayers, & Bellack, 1994; MacNeil & Byers 2009; Simms & Byers, 2009; Yoo, Bartel-Haring, Day, & Gangamma, 2014). Therefore, discerning the effect of religion on maintaining strong relationships is crucial as an indirect influence on sexual satisfaction (Davidson et al., 1995). Finding a balance between individual interpretations of religion and society will be equally important, as is understanding the interaction between religion and other aspects such as cultural or socioeconomic issues (Hunt & Jung, 2009). The link between right-wing authoritarian politics and fundamentalism is one such issue, as is the notion of Asian and Middle Eastern women not necessarily sharing the same attitudes toward feminism and sexual freedom as American women (Brenner, 2003; Hunt & Jung, 2009; Reilly, 2011).

Although female scholars are reinterpreting biblical scripture, it is important for them to seek the support of the wider community and also accept that feminism has many different viewpoints and approaches that can vary among contexts (Hunt & Jung, 2009). For example, the Muslim hijab, traditionally the subject of much discussion by feminists, can be a sign of the religious oppression of women. It can also be a manifestation of the expression of faith by women (Badran, 2013; Hunt & Jung, 2009). This is not to say they are less feminist or free, only that they have a different and equally valid perspective. Within many developing countries during the postcolonial era, secularization and feminism were often viewed as a neocolonial imposition; hence, failing to consider local views can be counterproductive (Reilly, 2011). One issue with sex education for

Muslims, for example, is that it is difficult to implement sex education as an intervention against sexual risk taking in a population that is commonly religious because students frequently opt out of related classes. Such education must target not only devout Muslims, but also cater to non-Muslims with more liberal attitudes (Smerecnik et al., 2010).

It is important to recognize that becoming more secular does not always equate to a lack of religion; individuals may exercise their choice to move to a religion with less conservative views. A personal interest in many issues may require a broader coalition of interests such as the common view among feminists that they should “fight” for gay rights. It is important to avoid cultural appropriation or the assumption that different population groups will share common goals, especially when competing for resources. However, feminist thought now understands that changing these attitudes and challenging the cultural patriarchy requires seizing a measure of control over religion to effectuate internal change (McKay, 1997). This moves beyond the traditional feminist paradigm that perceives societal change as an inevitable decline in religious practice that can be ignored (Reilly, 2011).

In Western culture, in particular, shifts in religious attitudes are evident across religious denominations. Emphasis is now placed on personal-belief classification schemas or the development of more progressive, female-friendly interpretations of scripture (Hunt & Jung, 2009). If feminist views criticize religious dogma, a redefinition of sexual satisfaction is indicated within the respective religious framework to offer an alternative.

## Summary and Conclusions

Researchers have revisited the relationship between religion and sexuality, often within the framework of sexual health among adolescents and women (Moran & Corley, 1991). Studies have uncovered a divergence in individual views, which is possibly a reaction to the forces of globalization and individualism that increasingly shape Western and global views. Rather than an antagonistic force against sexual liberty and personal freedom, religion is often viewed as an integral aspect of the human condition that may follow the past paradigm of guilt but can also support sexuality with tolerance toward secularism. Religion and secularism are no longer separate entities, but may in fact, mutually influence one other.

The correlation between high religiosity and reduced risky sexual behavior denotes a positive aspect of religion that can be drawn from religious communities. A key to understanding religion is to recognize that it is not a monolithic construct, although specific Christian doctrines pervade American culture and politics. Religion and faith may be highly individual and influenced by spirituality, leaving room for religion to adapt and change to conform to modern society and remain a useful force for sexual protection and therapy. Intrinsic religiosity is increasing in importance as it allows religious practice without forcing the acceptance of strict religious doctrine and also allows the incorporation of spiritual beliefs and philosophies.

Tolerance toward sexuality—whether homosexual or heterosexual—and the promotion of women's rights will involve a change in mainstream religion and a challenge to patriarchal beliefs and antihomosexual sentiment. There are signs that many

churches in the United States are adapting and becoming more tolerant, reflecting the societal changes of the times (Mulligan, 2006). Homosexuals are as religious as heterosexuals and have often been forced to develop their own religious interpretations that allow a reconciliation between their sexuality and beliefs. However, this population is experiencing increasing acceptance within religious venues. Similarly, women are playing more dominate roles within such venues and are reinterpreting scripture as part of a challenging and reactionary approach against the fixed religious dogma of the past. However, this is not simply a matter of religion. As the Anglican church has found, some Western congregations accept female and homosexual bishops; however, African American congregations are far less likely to express such acceptance. Ethnic and cultural variables carry equal importance. Within the United States, it is a safe assumption that secularization will not remove the influence of Protestant Christianity from society, culture, and politics; consequently, altering core Christian beliefs may ultimately prove to be the effective option toward societal tolerance and positive growth.

The link between religion and sexuality has progressed from a necessarily antagonistic view, with religion perceived as joyless and oppressive and sexuality as an end in and of itself. For many individuals, religion and faith serve as a source of strength (Berger, 2015) linked to combating physical illnesses, maintaining mental health, and increasing well-being by providing a source of hope in times of extreme stress (Ciarrocchi & Deneke, 2005; Koenig, 2009; Smith & Horne, 2008). The key is finding a pathway to absorbing religion into sex education, in addition to family and relationship therapy, while recognizing individuals with different faiths or none, as well as those who



may have their own interpretation of existing religious texts. Drawing upon religious instruction may contribute to a reduction in risky sexual behavior in adolescents and provide stable family environments and supportive communities.

The problem and ethical responsibility rests in ensuring that an aggressive, authoritarian, judgmental deity is not emphasized over the benevolent, more individualistic interpretation of a given deity. Religion should not promote discrimination against women nor homosexuals, nor promote a patriarchal agenda that denies women the right to sexuality or reproductive rights as part of the wider feminist challenge. Groups such as feminists and gay activists must accept varying interpretations of religion, especially from within a globalized context with the perspectives of many cultures. Ideas sourced in Western secularism and feminism are not shared around the world. Additional research is needed on finding cultural overlap, especially while examining issues from perspectives other than Western Judeo-Christian.

Clearly, more sophisticated measures of the relationship between religiosity and sexuality are required due to its multidimensional and complex nature. Ideally, these measures will consider beliefs surrounding deities and commitment to the edicts of particular religions on sexual behavior. This would include measurement of church-group involvement and ways the commitment to a religious belief manifests such as attending church retreats or serving within the church organization as an usher or, as in the Catholic tradition, as a member of the Knights of Columbus. Measures of spirituality are important as an increasing number of individuals define themselves as spiritual rather than

religious, and it would also be helpful to know how this distinction manifests among different populations.

Future research must also consider the impact of religion on different age-groups because the majority of existing studies have been conducted with a focus on college-student populations. Valuable data could be collected by tracking the influence of religion on sexual behavior across the lifespan to determine changes over time. Research could also consider how both religiosity and sexual behavior have changed over time, the impact, and the relationship between these variables. Examples might be the impact of early sexual activity on religiosity and the impact of declining religiosity on sexual behavior. Future study of the mechanisms by which religion impacts sexual attitudes and behavior would contribute valuable data to the base of existing knowledge.

It is noteworthy that individuals frequently endorse religious views as justification for abstinence; however, the dynamics of this cause-and-effect relationship remain unknown. Whether religiously inspired restraint is a function of guilt, moral obligation, fear of retribution, social proof, or other variables also needs further study, as well as how these variables differ, if at all, across genders, age-groups, socioeconomic statuses, and races. When the psychological community has a better understanding of these issues, the profession may be better positioned to assess whether religion can be effectively recruited as a sex-education tool. Moreover, with increased understanding of the ways religion reinforces restraint in sexual activity, it may be possible to determine how religion could support the development of increased self-control in other areas of risky behavior such as drug abuse.

The field of neuroscience is another area of interest for researchers within the realm of psychology, especially as it relates to impulse control. Neuroscience is increasingly used to understand behavior. Raine et al. (2006) conducted research grounded in neurocriminology and suggested that structural pathways within the brain are associated with criminal behavior. These researchers found that poor impulse control is a function of weak frontal-lobe executive control and a determinant of criminal behavior. A smaller amygdala (i.e., a brain structure involved in emotional response) was found to reduce empathy and emotional significance, leading to sociopathic behavior and crime (Raine, Lencz, Bihrl, LaCasse, & Colletti, 2000). Of research interest is whether religiosity can moderate these neurobiological influences. By encouraging sexual restraint, do religious beliefs contribute to the development of the neurological structures that underpin self-control? Do these neuropathologies mitigate religiosity or, more accurately, how are these factors mutually influential?

With the advent of easily operational and accessible brain-screening devices, it will be possible to consider the impact of neurological variables on sexual behavior and religion, as well as any interrelationships. This is important because researchers have suggested that exercising restraint in one area of behavior generalizes to other behaviors, resulting in the development of self-control (Beaver, Wright, DeLisi, & Vaughn, 2008; Duntley & Buss, 2005; Murray, Obsuth, Eisner, & Ribeaud, 2016; White & Turner, 2014; Yang & Raine, 2009). For its potential value in sex and health education, as well as the information generated on the impact of cognitive beliefs on expressed behavior,

research into the relationship between sex and religiosity will continue to be of societal interest. Such study will also serve as a mechanism for progressive social change.

## Chapter 3: Research Method

### Overview

Human sexuality has long been regulated by religious doctrine. Early researchers demonstrated that religiosity serves as a predictor of sexual attitudes and expressed sexual behaviors (Kinsey et al., 1948, 1953). Much of the related existing research has focused on the role of religion as a mediating factor in sexual fantasy, the frequency of sexual activity, and sexual satisfaction rates in populations who profess membership in organized religious groups (Pluhar et al., 1998; Thornton & Camburn, 1989).

Over time, research has progressed to differentiate between religiosity and spirituality, as these variables relate to sexuality (Fiori, Brown, Cortina, & Antonucci, 2006; Fitchett & Powell, 2009; Kapuscinski & Masters, 2010; McCullough, Friedman, Enders, & Martin, 2009; Mokuau, Hishinuma, & Nishimura, 2001; Park, 2005; Piedmont, 1999a, 1999b, 2005). However, few researchers have focused on the sexual behavior and sexual risk taking of atheists, agnostics, or self-professed free thinkers who do not subscribe to traditional religious mindsets. In this research, I evaluated any cognitive dissonance between religious beliefs and sexual self-expression among self-professed religious individuals (i.e., theists) and compared that to dissonance found among atheists and agnostics (i.e., nontheists). I also assessed the presence of guilt resultant from indoctrination of religious ideologies for any resultant reduction in sexual self-expression and associated sexual satisfaction.

The purpose of this study was to examine the relationship between religiosity and sexual attitudes and behaviors among both theists and nontheists. The study was unique

in that I addressed sexual self-expression and attitudes toward sexuality from the perspectives of both theists and nontheists, the latter of which are grossly underrepresented within related literature. The findings may provide needed insight into the possible correlation between religion and sexuality inclusive of expressed sexual behaviors and sexual satisfaction. The possible differences between the two study groups, in terms of sexual experience, drive, attitude, information, fantasy, and satisfaction, may also collectively mark a valuable contribution to the existing base of knowledge in this realm. These issues are important for healthy psychosocial development (Piedmont, 2005).

The positive social change implications of this study involve a clearer understanding of the possible association between religiosity and sexuality, and whether differences in sexual behaviors exist between theists and nontheists. The results are important in that they may lead to enhanced understanding of healthier sexuality for individuals, increased communication among couples, enhanced acceptance of different sexual orientations, and decreased cognitive dissonance among those struggling with sexual behaviors that negate the teachings of their religious tenets. I designed the following research questions and corresponding hypotheses to guide the study:

*RQ1:* In a binary logistic regression, to what extent are theists and nontheists correctly differentiated by sexual functioning subscale scores of sexual experience, drive, attitude, information, fantasy, and satisfaction?

*H<sub>0</sub>1*: In a binary logistic regression, sexual experience, drive, attitude, information, fantasy, and satisfaction subscale scores will not be statistically significantly better than the constant only model in correctly differentiating theists and nontheists.

*H<sub>1</sub>1*: In a binary logistic regression, sexual experience, drive, attitude, information, fantasy, and satisfaction subscale scores will be statistically significantly better than the constant only model in correctly differentiating theists and nontheists.

*RQ2*: To what extent does a set of demographic variables (age, gender, religious affiliation, marital status, ethnicity, and education level) improve the differentiation of theists and non-theists after controlling for the multi-dimensional sexual functioning subscale scores?

*H<sub>0</sub>2*: In a hierarchical binary logistic regression, the block effect of the set of demographic variables will not be statistically significant.

*H<sub>1</sub>2*: In a hierarchical binary logistic regression, the block effect of the set of demographic variables will be statistically significant.

*RQ3*: What is the best model of sexual functioning subscale scores and demographic variables for correctly differentiating theists and nontheists?

### **Research Design and Rationale**

I used a quantitative, correlational research design with a survey strategy. Such a design supports an examination of the potential relationships between variables (Bernard, 2006; Cooper & Schindler, 2006; Creswell, 2009; Johnson & Christensen, 2007). A quantitative approach enables researchers to focus on the meticulous operationalization of variables inherent to the research process and provides for clear definition of the specific

variables and concepts involved in the respective study (Tewksbury, 2009). Quantitative research is designed to identify relationships between variables by exploring trends, meanings, and suggested characteristics (Bordens & Abbott, 2007; Creswell, 2009; Graziano & Raulin, 2009; Leedy & Ormrod, 2004). In this study, the quantitative design allowed me to explore theism as it related to sexual behavior and attitudes toward sexuality.

Researchers use a correlational design when investigating predictor variables with variation that manifests in a natural manner. In this study, I measured the sexual self-expression, attitudes toward sexuality with no control over the variation of these measures because scores depended upon the lives of the participants. I also assessed whether the participants were theists or nontheists. The basic purpose of a correlational study is to explore relationships but not the cause of relationships. Triola (1998) cautioned that researchers must not conclude that the results of a correlational study imply causality.

## **Methodology**

### **Population**

Participants in the study were 18 years of age or older and currently residing in the United States. I used SurveyMonkey, an online survey service, to collect all data from the database of more than 45 million individuals who access the online surveys on a monthly basis (SurveyMonkey, 2016). This plethora of potential participants allowed me access to the number of individuals necessary to power the study.



### **Sampling Procedures**

I performed a power analysis to estimate the required sample size to achieve 80% power for the data analysis. Number Cruncher Statistical Software (NCSS Version 12), supported the use of a logistic regression model. The parameters of the power analysis were a power of 0.80, an alpha of .05, alternative hypothesis testing set as two-sided, an estimated baseline probability of 0.20, and a medium effect size represented by a detectable odds ratio of 1.5. I obtained the estimated baseline probability from the Pew Research Center (2012a).

According to surveys conducted by the Pew Research Center (2012b), 19.6% of all Americans are unaffiliated with a specific religion. The power analysis was performed using an  $R^2$  between the predictor variables ranging from 0 to 0.30. Using this range and the described parameters, the results of the power analysis indicated that a sample of size ranging from 298 to 426 participants was necessary to power the logistic regression. A total of 534 respondents completed at least some parts of the survey however, I retained only viable and complete records for analysis. After removal of respondent records with anomalous and incomplete records, I retained a total of 404 records.

### **Data Collection**

As noted earlier, data was collected in the study via an online survey service. All participants were 18 years of age or older and currently resided within the United States. The survey service utilized its database of more than 45 million individuals who accessed potential surveys on a monthly basis (SurveyMonkey, 2016) to recruit an appropriate sample. Once the agreed-upon number of participants consented to participation,

solicitation for the study was ceased. I downloaded the sample in the form of an Excel spreadsheet and examined the dataset for any errors within the data collection or downloading processes. The dataset was then uploaded into a statistical computer-software package for editing and analysis, the Statistical Package for the Social Sciences, SPSS Version 22.

### **Instrumentation and Operationalization of Constructs**

I administered two survey instruments in this study: The Derogatis Sexual Functioning Inventory (DSFI), and a demographic questionnaire designed specifically for the research.

**Derogatis Sexual Functioning Inventory.** The DSFI (See Appendix B) is a multiscaled inventory addressing various dimensions related to personality and sexuality (Herold & Weis, 2012). The survey facilitates assessment of adequacy, in terms of individual sexual functioning, and is composed of 10 sections, or subscales, addressing sexual information, sexual experience, sexual drive, sexual attitude, sexual symptoms, affects, gender role, sexual fantasy, body image, and sexual satisfaction (Derogatis & Melisaratos, 1979). The DSFI comprises 254 items total arranged into 10 subsets. Item formats ranged from “yes” or “no” responses to multiple point Likert scales. The tool has been extensively reviewed in related research and remains “the best composite measure of overall sexual functioning available” (Herold & Weis, 2012, p. 1). For the purposes of my study, I included the scales addressing sexual experience, drive, attitude, information, fantasy, and satisfaction. The Board of Regents of the University of Nebraska and the Buros Center for Testing (as cited in D’Costa, 1995) reported that reliability coefficients

for the DSFI are above 0.70, with the exception of the subscales of sexual desire, gender roles, and body image, none of which I used in this study. Derogatis and Melisaratos (1979) reported acceptable reliability coefficients for the instrument ranging between 0.60 and 0.97, as well as test-retest coefficients for a 2-week interval ranging from the high 0.70s to the low 0.90s.

Derogatis and Melisaratos (1979) showed discriminant validity in a study of 150 sexually dysfunctional persons and 230 nonpatient normals; there were significant differences in DSFI scores between these two groups, showing the discriminant ability of the DSFI (Beere, 1990). Derogatis and Melisaratos (1979) analyzed males and females separately, and reported that the analysis produced 77% correct assignment for males and 75% correct assignment for females (Beere, 1990). Beere (1990) reported numerous studies indicating that the DSFI is able to discriminate between groups including those by Derogatis, Meyer, and Boland (1981); Derogatis, Meyer, and Dupkin (1976); Newman and Bertelson (1986); Schreiner-Engel, Schiavi, Vietorisz, De Simone Eichel, and Smith (1985); and others. As a result, the DSFI demonstrates both validity and reliability and is an appropriate instrument for this study. The DSFI is a copyrighted instrument and distributed for sale by Clinical Psychometric Research. The instrument takes approximately 45-60 minutes to complete (Derogatis & Meyer, 1979).

**Demographic questionnaire.** I used a demographic questionnaire (See Appendix A) designed specifically for the research to collect participant data on age, gender, ethnicity, education level, marital status, and identification as a theist or nontheist. The participants were adult individuals who volunteered for participation in the study through

SurveyMonkey a Web-based survey service.

### **Predictor Variables**

I measured ten variables in the study, six of which I used as variables of interest in the hypotheses testing including sexual experience, drive, information, attitude, fantasy, and satisfaction.

**Sexual experience.** Sexual experience was a count variable, which I measured using the Experiences Section II subtest from the DSFI. It facilitates assessment of which experiences have occurred for the respondent. These experiences can include various forms of sexual intercourse and oral-genital activities. A total of 24 experiences are presented on the instrument and each participant answered either “yes” or “no” to each experience. The “yes” responses were summed to provide a total score for sexual experience. The range of possible scores was from 0 to 24, with higher scores indicating a higher number of sexual experiences.

**Drive.** Drive was a continuous variable that I measured using the Drive subscale of the DSFI. It is a measure of the sexual drive of the respondent. Five items, referred to as domains, comprised the subscale. Each of the five domains was measured on an ordinal scale ranging from 0 to 8 (0 = *not at all*, 1 = *less than 1 month*, 2 = *1–2 months*, 3 = *1 week*, 4 = *2–3 weeks*, 5 = *4–6 weeks*, 6 = *1 day*, 7 = *2–3 days*, and 8 = *4 or more days*). The drive score was measured by summing the results of the five domains of sexual intercourse, masturbation, kissing and petting, sexual fantasy, and ideal frequency of intercourse. Possible drive values ranged from 0 to 40, with higher scores indicating a

greater sex drive or a higher “level of interest or investment in sexual activities and relationships” (Derogatis, 1996, p. 3).

**Information.** Information was a continuous variable that I measured using the Information subscale of the DSFI. It facilitated the assessment of the level of accuracy with information known by the respondent. There were a total of 26 items presented in this subscale with true-false response selections. Correct responses were totaled to obtain a score for information with a possible range from 0 to 26. A higher information score indicated a higher amount of accurate information regarding sexual functioning (Derogatis, 1996, p. 2). Sample questions included the following: “A woman who has had a hysterectomy can no longer experience orgasm” and “Men reach the peak of their sexual drive in their late teens while women reach their peak in their 30s.”

**Attitude.** Attitude was a continuous variable that I measured via the Attitude subscale of the DSFI to measure the liberal and conservative sexual attitudes of respondents. This subscale contained 30 items that were rated on a 5-point Likert scale. Negative scores indicated agreement with a conservative item or disagreement with a liberal item (Derogatis, 1996, p. 4). Positive scores were associated with agreement with a liberal item or disagreement with a conservative item (p. 4). Possible values ranged from -60 to 60 with higher scores indicating a more liberal attitude toward sex.

**Fantasy.** Fantasy was a count variable that I measured via the Fantasy subscale of the DSFI to assess the sexual fantasies of respondents. There were a total of 20 major sexual themes, and participants were asked to indicate which on the provided list they have engaged as a sexual fantasy. The fantasy score was the total number of fantasies

participants indicated they have entertained. Scores on the fantasy subscale can range from 0 to 20. Higher scores indicated a greater number of sexual fantasies in which the respective respondents have engaged.

**Satisfaction.** Satisfaction was a count variable measured via the Sexual-Satisfaction subscale of the DSFI to assess the sexual satisfaction of the respondent. The subscale was composed of 10 items with true or false response selections. Satisfaction was simply a count of the number of endorsements indicating satisfaction with a particular component, and with some responses reverse coded. Possible values ranged from 0 to 10, with higher scores indicating a greater amount of sexual satisfaction in terms of frequency, variety, and longevity of sexual behaviors, in addition to the quality or quantity of communication with a sexual partner.

### **Control and Criterion Variables**

In the study, four measured variables served as control variables in the hypotheses testing—age, gender, ethnicity, and education level. Control variables were necessary to eliminate the potential for lurking variables. Past studies have linked theism with age (Brown, Chen, Gehlert, & Piedmont, 2012; Dalby, 2006; Dillon, Wink, & Fay, 2003; Good, Willoughby, & Busseri, 2011; Ingersoll-Dayton, Krause, & Morgan, 2002; Koenig, McGue, & Iacono, 2008; McCullough, Enders, Brion, & Jain, 2005; McCullough & Laurenceau, 2005; McCullough, Tsang, & Brion, 2003; Wink & Dillon, 2002, 2008); gender (Brennan & Mroczek, 2003; Brown et al., 2012; Good et al., 2011; Koenig et al., 2008; McCullough et al., 2005; McCullough & Laurenceau, 2005; McCullough et al., 2003; Wink & Dillon, 2002, 2008); ethnicity (Agishtein &

Brumbaugh, 2013; Allport & Ross, 1967; Cole & Ahmadi, 2010; Dy-Liacco et al., 2009; Edwards, 2008; Emerson & Smith, 2000; Ghaffar-Kucher, 2011; Hunsberger & Jackson, 2005; Jackson & Hunsberger, 1999; Jacobson, 1998; Kim, 2006; Noll, 2006; Park, 2012; Stewart, 2002; Watt, 2004); and education (Argyle, 1958; Bell, 2002; Glick, Lameiras, & Rodriguez-Castro, 2002; Inglehart & Welzel, 2005; Kelley & De Graaf, 1997; Lynn, Harvey, & Nybord, 2009; Miller & Nakamura, 1996; Scheepers, Te Grotenhuis, & Van Der Slik, 2002; Shenhav, Rand, & Green, 2012). It was therefore necessary to remove these variables as potentially confounding.

Each of the control variables was measured using the demographic questionnaire specifically designed for the study.

**Age.** Age was a continuous variable that facilitated the measurement of participant age in years. Age had a range of possible values from 18 to 120.

**Gender.** Gender was a categorical variable that indicated the biological gender or gender identity of the respondent. Responses were selected from five provided options—Female, Male, Non-binary/third option, Prefer to self-describe\_\_\_\_, and Other.

**Ethnicity.** Ethnicity was a categorical variable that indicated the ethnicity of the respondent. Responses were selected from five provided options—European American, African American, Hispanic American, Asian American, and Other.

**Education level.** Education level was an ordinal variable and participants selected one of the following six provided responses: *some high school, high school graduate/GED, some college/technical school graduate, bachelor's degree, or master's degree or doctorate degree.*

**Marital status.** Marital status was a categorical variable that indicated the marital status of the respondent. Responses were selected from five provided options—Single, Married, Separated, Divorced, or Widowed.

The study will have one criterion variable, which is

**Theism.** This was a dichotomous variable used in the assessment of participants as theist, atheist, agnostic, or not affiliated with a formal religion. Theism denoted the belief in the existence of a god (monotheism) or gods (polytheism).

The demographic questionnaire drew these data.

### **Data Analysis**

A statistical computer software, SPSS Version 22, supported analysis of the data collected in the study and all inferential tests used a 95% level of significance. The demographic data collected on the participants included age, gender, religious affiliation, marital status, ethnicity, and education level. Descriptive statistics were used to present an overall description of the sample, which included means, standard deviations, and ranges for continuous and count variables; frequencies and percentages were included for all categorical and ordinal variables. A comprehensive demographic profile of the study sample was provided in tabular format. The internal-consistency reliability of the sample for the measurements used from the DSFI were determined via application of a Cronbach's alpha. Collinearity was tested using a Pearson's product-moment correlation, with the exception of education level due to its ordinal nature, for which a Spearman's rank-order correlation was used. A correlation of 0.90 or greater indicated collinearity (Gravetter & Wallnau, 2009). If collinearity was evidenced between predictor variables,



the removal of one of the variables was used to eliminate the issue, or both variables were retained, whichever was more appropriate.

Both the research questions and associated hypotheses were addressed within the second level of the hierarchical logistic regression. The first level of the regression included all control variables (i.e., age, gender, ethnicity, and education level). Level two added all variables being tested for the hypotheses (i.e., sexual attitude, fantasy, satisfaction, drive, information, and experiences). This regression utilized theism as the criterion variable in the model. Hypothesis 1 was tested within the second level of the hierarchical logistic regression using the survey results pertaining to the relationship between theism and sexual self-expression and behaviors, which was measured through the Information and Sexual Experience subscales of the DSFI. Hypothesis 2 was tested within the second level of the hierarchical logistic regression using the survey results pertaining to the relationship between theism and attitudes toward sexuality and sexual behaviors, which was measured through the Sexual Attitude, Fantasy, Satisfaction, and Drive subscales of the DSFI.

### **Threats to Validity**

In the research, threats to internal validity included participants who did not take their role in the study seriously, as well as those participants who presented with confusion as to the research questions. To address this potentiality, detailed directives and instructions were provided to all participants. The study relied upon the voluntary responses of all participants. It is possible for voluntary participants in research to present with external motivational factors for their participation. Volunteerism, in and of itself,

requires a certain degree of personal initiative; therefore, those who agreed to volunteer for this research may have presented as more confident and sociable compared to those who took the initiative to voluntarily participate in research endeavors (Krumpal, 2013). The research was designed with an online-survey approach, thus limiting the degree of face-to-face interaction with me as the researcher, which inherently required a degree of trust on behalf of research respondents. Finally, social desirability may have served as a potential threat with self-report measures. Some research participants may have felt pressured to address all of the survey questions in order to present themselves in the most socially acceptable light. Surveys examining issues of a personally sensitive nature, such as sexual behaviors, represent some of the most difficult survey answers to address truthfully. Conversely, however, Ahern (2005) suggested that the use of anonymous surveys holds the potential to decrease social-desirability bias.

### **Ethical Procedures**

Ethical considerations in the quantitative study included the need for informed consent given that participants were disclosing sensitive information regarding personal sexual behaviors and attitudes toward sexuality. Participant confidentiality served as an additional ethical consideration, given the disclosure of sensitive and personal information. It was incumbent upon me to ensure the protection of all research data. Participation was completely voluntary and anonymous, and all respondents were allowed to withdraw their participation in the study at any time. All collected data was coded to ensure anonymity.

Participant confidentiality and nondisclosure statements were included as part of the consent-form package, and all necessary steps were taken to ensure confidentiality via the chain of custody and all associated data-handling procedures. The survey instruments were administered in an electronic form and distributed solely to adult participants over 18 years of age. Approval was obtained from the Institutional Review Board of Walden University for the study. All data related to the research, was maintained in a secure location and on password-protected computers. Anonymity of respondents was protected when using Survey Monkey by way disabling IP address tracking, an option provided by Survey Monkey, therefore there was no way of tracing research respondents. Written permission was also obtained by Survey Monkey to conduct academic research using their online survey platform.

User security through Survey Monkey was further protected by way of User Security (authentication, single sign-on capabilities, data encryption, and data portability), Physical Security (connectivity, backup frequency, failover, uptime, and redundant power supplies), Network Security (firewalls, access controls, testing, logging and auditing, and encryption in transit), Organizational and Administrative Security (information security policies, training, employee screening, service providers, and audit logging), Software Development Practices (coding practices, stack, and deployment), and Compliance and Certifications (PCI and HIPAA). All Survey Monkey user data was further stored on servers located exclusively in the United States (Survey Monkey, 2016).

### **Summary**

The methodological process implemented in this quantitative, correlational study was described in detail in the aforementioned section. The study sample was comprised of individuals 18 years of age or older who were currently residing within the United States. Sampling was effectuated by the online survey service to be used for instrument administration. The DSFI facilitated data collection related to the sexual experience, drive, attitude, information, fantasy, and satisfaction of the respondents.

Inferential statistics were drawn via a logistic-regression model using the criterion variable (i.e., theism) regressed on the relationship between attitudes toward sexuality and sexual behaviors. This was performed while controlling for the age, gender, ethnicity, and education level of the respondents. The findings of the study are reported in detail and a discussion of the results are provided in Chapter 4.

## Chapter 4: Results

### **Introduction**

In Chapter 4, I present the results of the research in a descriptive (textual) format, and in a series of tables. I have divided the results into four sections. In the Introduction, I offer a brief overview of the study purpose, research questions, and statistical hypotheses. The Data Collection section includes the population and descriptive findings. The Results section includes an investigation of my assumptions as relates to inferential analysis, presentation of findings for the hierarchical logistic regression, and a discussion of hypothesis testing. In the Summary, I offer an overview of the findings and transition to the final chapter. I used SPSS Version 22 statistical software for all descriptive and inferential analyses, which I tested at the 95% level of significance.

The purpose of this study was to examine the relationship between religiosity and sexual attitudes and behaviors among both theists and nontheists. The study was unique in that I addressed sexual self-expression and attitudes toward sexuality from the perspectives of both theists and nontheists, the latter of whom are grossly underrepresented within related literature. The findings may provide needed insight into the possible correlation between religion and sexuality inclusive of expressed sexual behaviors and sexual satisfaction. The possible differences between the two study groups in terms of sexual experience, drive, attitude, information, fantasy, and satisfaction, may also collectively represent a valuable contribution to the existing base of knowledge in this realm.

I developed three research questions for this study. A two-step hierarchical binary logistic regression model was tested to address statistical hypotheses for Research Questions 1 and 2. Research Question 3 was descriptive in structure and therefore did not necessitate hypotheses testing. The following research questions and corresponding statistical hypotheses for Research Questions 1 and 2 guided this research:

*RQ1:* In a binary logistic regression, to what extent are theists and nontheists correctly differentiated by sexual functioning subscale scores of sexual experience, drive, attitude, information, fantasy, and satisfaction?

*H<sub>0</sub>1:* In a binary logistic regression, sexual experience, drive, attitude, information, fantasy, and satisfaction subscale scores will not be statistically significantly better than the constant only model in correctly differentiating theists and nontheists.

*H<sub>1</sub>1:* In a binary logistic regression, sexual experience, drive, attitude, information, fantasy, and satisfaction subscale scores will be statistically significantly better than the constant only model in correctly differentiating theists and nontheists.

*RQ2:* To what extent does a set of demographic variables (age, gender, religious affiliation, marital status, ethnicity, and education level) improve the differentiation of theists and non-theists after controlling for the multi-dimensional sexual functioning subscale scores?

*H<sub>0</sub>2:* In a hierarchical binary logistic regression, the block effect of the set of demographic variables will not be statistically significant.

*H<sub>1</sub>2:* In a hierarchical binary logistic regression, the block effect of the set of demographic variables will be statistically significant.

*RQ3*: What is the best model of sexual functioning subscale scores and demographic variables for correctly differentiating theists and nontheists?

### **Data Collection**

#### **Population and Descriptive Findings**

Study participants were 18 years of age or older and were currently residing in the United States. I used SurveyMonkey, an online survey service, to collect all data from a database of more than 45 million individuals who access the online surveys on a monthly basis (SurveyMonkey, 2016). Data was collected from June 12, 2017 through June 21, 2017. A total of 534 respondents completed at least some parts of the survey. However, I retained only viable and complete records for analysis. After removal of respondent records with anomalous and incomplete records, I retained a total of 404 records for analysis. The retention rate was therefore 76%. Of the 404 respondent records retained for analysis, 366 respondents (90.6% of all respondents) were classified as theist, and 38 respondents (9.4% of all respondents) were classified as non-theist. A respondent was classified as non-theist if they chose the answer of “atheist” to Item 6 of the demographic survey (see Appendix A).

Respondents did not always choose uniformly according to the demographic survey, and some variables contained very low counts on some classifications. Therefore some adjustment and aggregation of the demographic variables was needed to ensure a reasonable fit of the logistic regression model. For instance, some respondents chose an answer to Item 2 (Indicate your gender) of the demographic survey as “male” or “female,” but then also gave a nonsensical fill-in-the-blank answer to the “Other, Prefer

to Describe” option for gender, such as “I am a regular height and weight,” or “Nerd,” or “Tattooed.” I kept a cleaning file to track the steps in data cleaning. However, the steps in data cleaning and coding were quite involved and numerous, and therefore are not reported in the body of this reporting. The demographic and descriptive information in Table 1 therefore includes the final values derived for use in the logistic regression model.

The mean age of all 404 respondents was 35.74 years ( $SD = 14.59$  years). The mean age of the 366 respondents classified as theists was 36.41 years ( $SD = 14.90$  years). The mean age of the 38 respondents classified as nontheists was 29.32 years ( $SD = 8.96$  years). As noted in the previous paragraph, Table 1 presents the frequency counts and percentages of the categorical control variables as they were coded for use in the hierarchical logistic regression model. The majority of all respondents were female (74.8%), and European American (61.4%). Forty-four percent of respondents were single, and approximately 46% were married. As would be expected with a sample that was predominantly theist ( $n = 366$  theists, 90.6% of the sample), the proportions of respondents in each demographic category were similar to the overall proportions for the entire sample of 404 respondents. The distribution of nontheists ( $n = 38$ ) in each group of the demographics was more dispersed, but still similar to the overall sample and the theists with the exception of the variable of education level. Forty-two percent of the nontheists had an education level of high school degree or lesser, compared to approximately one-quarter of all respondents (25.5%) and theists (23.8%).



Table 1

*Frequency Counts and Percentages of Categorical Control Variables*

Variable/Classification	All Records ( <i>N</i> = 404)		Theist ( <i>n</i> = 366)		Nontheist ( <i>n</i> = 38)	
	Freq.	%	Freq.	%	Freq.	%
<b>Gender</b>						
Female	302	74.8	277	75.7	25	65.8
Male	102	25.2	89	24.3	13	34.2
<b>Ethnicity</b>						
European American	248	61.4	227	62.0	21	55.3
African American	46	11.4	39	10.7	7	18.4
Hispanic American	53	13.1	46	12.6	7	18.4
Asian American	19	4.7	17	4.6	2	5.3
Other ethnicity	38	9.4	37	10.1	1	2.6
<b>Education level</b>						
High school degree or lesser	103	25.5	87	23.8	16	42.1
Two year college or technical degree	145	35.9	134	36.6	11	28.9
Bachelor's degree	105	26.0	100	27.3	5	13.2
Master's degree or greater	51	12.6	45	12.3	6	15.8
<b>Marital status</b>						
Single	178	44.1	159	43.4	19	50.0
Married	184	45.5	167	45.6	17	44.7
Separated/divorced/widowed	42	10.4	40	10.9	2	5.3

*Note.* Freq. = frequency count; % = percentage of group.

## **Instrumentation**

I administered two survey instruments in the study: the DSFI (Appendix B) and a demographic questionnaire designed specifically for the research (Appendix A). With one exception for the construct of drive, I coded the six variable constructs of the DSFI according to the specifications outlined in the Methods chapter. The variable construct of drive was to be derived as the sum of five items. However, the fifth item (“What would be your ideal frequency of sexual intercourse?”) was left open-ended and many respondents answered in confusing and ambiguous ways, or in ways that did not fit with the coding criteria of the drive construct. Removal of records with anomalous or missing data on the fifth item resulted in a retained sample of 82 records. In order to preserve data and make use of the drive variable, the fifth item was not included in the drive score. Thus, the variable construct of drive included four items summed into a possible score range of 0 to 32, rather than 0 to 40.

The control variables derived from the demographic instrument also contained many anomalous or nonsensical responses, as well as some categories of very few responses. Therefore, I coded the variable controls for analysis according to the variable classifications in Table 1.

### **Internal consistency reliability of instrumentation with the sample.**

Internal consistency of a survey with the respondents’ answers in a sample can be assessed with Cronbach’s coefficient alpha. However, Cronbach’s coefficient alpha is applied to measurement scales that are Likert-response or ordinal in nature. The scoring of the DSFI constructs varied across the six constructs. I computed the constructs of

sexual experience and fantasy as the number of “yes” answers. Information and satisfaction were computed as the number of “correct” answers. Only the constructs of drive and attitude were structured in a way that Cronbach’s alpha coefficients could be used as a check on reliability.

A Cronbach’s alpha value of .70 or greater indicates adequate reliability of an instrument with the data collected (Field, 2005). Table 2 presents the Cronbach’s alpha coefficients for the constructs of drive ( $\alpha = .640$ ) and attitude ( $\alpha = .743$ ). I checked the items comprising the drive construct and found no anomalies. The Cronbach’s alpha value of  $\alpha = .640$  was close to the .70 cutoff. According to Field (2005), a lower Cronbach’s coefficient alpha can be expected for measures in the field of psychology or social sciences. Also, Cronbach’s alpha coefficients are sensitive to sample size and the number of items constituting a given construct. The sample size was adequate for this study. However, the drive construct was composed of only four items. I therefore determined that the low number of items in the construct was negatively affecting the construct. Additionally, the DSFI instrumentation has been used in many research studies with varied populations and returns good reliability. Therefore, despite a Cronbach’s coefficient alpha below the usually recommended .70, I retained the drive variable construct and used it for statistical analysis.

Table 2 includes the measures of central tendency and variability for the six DSFI variable constructs that I used as predictors in the hierarchical logistic regression model, as well as the Cronbach’s alpha coefficients for the ordinal/Likert-scaled constructs of drive and attitude.

Table 2

*Measures of Central Tendency and Cronbach's Coefficient Alpha Coefficients for Variable Constructs of the DSFI,*

Variable/Group	# of Items	<i>M</i>	<i>SD</i>	<i>Mdn</i>	Sample Range	$\alpha$
Information	26					N/A
Entire Sample		19.45	3.49	20.00	7 - 26	
Theist		19.49	3.41	20.00	10 - 26	
Nontheist		19.05	4.25	19.5	7 - 25	
Sexual experience	24					N/A
Entire Sample		16.53	6.66	18.00	0 - 24	
Theist		16.54	6.70	18.50	0 - 24	
Nontheist		16.47	6.28	18.00	1 - 24	
Drive	4					.640
Entire Sample		13.10	6.17	13.00	0 - 29	
Theist		12.72	6.15	13.00	0 - 29	
Nontheist		16.76	5.21	17.00	7 - 25	
Attitude	30					.743
Entire Sample		9.03	7.86	10.00	-14 - 28	
Theist		8.89	7.78	9.50	-14 - 28	
Nontheist		10.45	8.57	11.00	-14 - 24	
Fantasy	20					N/A
Entire Sample		6.83	4.21	7.00	0 - 19	
Theist		6.60	4.11	7.00	0 - 17	
Nontheist		8.97	4.60	9.00	1 - 19	
Satisfaction	10					N/A
Entire Sample		6.90	2.27	7.00	1 - 10	
Theist		6.91	2.31	7.00	1 - 10	
Nontheist		6.79	1.91	6.00	3 - 10	

*Note.* DSFI = Derogatis Sexual Functioning Inventory; *M* = Mean; *SD* = Standard Deviation; *Mdn* = Median;  $\alpha$  = Cronbach's Alpha Coefficient; N/A = Not Applicable. Cronbach's alpha is a measure of internal consistency reliability and was computed for the entire sample only ( $N = 404$  records).

## Results

### Assumptions

A two-step hierarchical binary logistic regression was performed to address the research questions of this study. The dataset was investigated to ensure that it satisfied the assumptions of the logistic regression analyses, namely: absence of missing data, absence of outliers, and absence of multicollinearity. Only complete records were retained for analysis. Therefore the assumption of absence of missing data was met.

Logistic regression is sensitive to outliers and multicollinearity (Pallant, 2013). Outliers in a dataset have the potential to distort results of an inferential analysis. A check of the coded values on the categorical variables indicated correct values with no outliers due to keying errors or other errors in the data processing. The ranges of data for the continuous variables predictor variables of (a) age, (b) sexual experience, (c) drive, (d) information, (e) attitude, (f) fantasy, and (g) satisfaction were checked and the values were within acceptable ranges (see Table 2). Therefore the assumption of absence of outliers was met.

Multicollinearity occurs when independent variables of a study are highly correlated with each other. Highly correlated is defined as a correlation coefficient between two variables of .90 or greater (Pallant, 2013). Multicollinearity between the variables used as independent predictors and control variables in the logistic regression was checked via a series of bi-variate Pearson's and Spearman's correlational analyses. The results of the correlational analyses are presented in Table 3. Multicollinearity was not detected for any of the variables used as independent predictors for the hierarchical

logistic regression model. Therefore, the assumption of absence of multicollinearity was met.

### **Correlational Analyses**

Prior to the compilation of the hierarchical logistic regression model, a series of correlational analyses were performed to investigate multicollinearity of bi-variate relations between the dichotomous, ordinal, and continuous variables used for inferential analysis. Table 3 is a presentation of the correlation coefficients. With the exception of the ordinal variable of education level, which was tested with Spearman's rank order correlations, all correlations were tested using Pearson's Product Moment correlation.

As to be expected, many strong and negative correlations were found between the classifications of the ethnic group variables, and also between classifications of the marital status variables. For instance, the correlation between the variable pair of ethnicity = European American and ethnicity = African American ( $r = -.452, p < .0005$ ) is to be expected because a respondent could not be classified as both ethnicities. Similarly, the correlation between marital status = single and marital status = married ( $r = -.812, p < .0005$ ) would be expected, since a respondent could not be both single and married. The correlations between the classifications of the ethnic group variables and between the classifications of the marital status variables are not reported in the text, to avoid redundancy in reporting the obvious.

The large number of records ( $N = 404$ ) caused even very small correlations ( $r = .10$ ) to show significance at the 95% level set for this study. According to Cohen (1988) small correlations are between  $+/- .10$  to  $+/- .29$ , moderate correlations are values

between +/- .30 to +/- .49, and strong correlations are values between +/- .50 to +/- 1.0.

In order to preserve parsimony in presentation of significant correlations, only moderate (+/- .30 to +/- .49) and strong (+/- .50 to +/- 1.0) correlations are reported.

Moderate correlations were found between the variable of age and the variables of marital status = single ( $r = -.491, p < .0005$ ), and marital status = married ( $r = .319, p < .0005$ ). The negative direction of the correlation between age and marital status = single suggests that as respondents grow older in age they tend to NOT be single. The positive correlation between age and marital status = married suggests that as respondents grow older in age they tend to be married.

The variable of information was moderately correlated with the variable of attitude ( $r = .351, p < .0005$ ). The positive relationship suggests that the scores move in a similar manner between information and attitude. Thus, higher scores for information are associated with higher scores for attitude, and lower scores for information are associated with lower scores for attitude.

Experience was moderately, and positively, correlated with drive ( $r = .347, p < .0005$ ). The positive correlation suggests that when scores increase or decrease for experience, the scores move similarly for drive. Experience was also moderately, and positively, correlated with fantasy ( $r = .316, p < .0005$ ). The positive correlation suggests that when scores increase or decrease for experience, the scores move similarly for fantasy. Fantasy was moderately correlated with drive ( $r = .351, p < .0005$ ). The positive correlation suggests that when scores increase or decrease for fantasy, the scores move similarly for drive.

Table 3

*Correlations for Bi-Variate Relationships of Variables Included in the Hierarchical Logistic Regression Model (N = 404)*

	Variable	1	2	3	4	5	6	7	8	9	10	11
1.	Theism = Theist											
2.	Age (in years)	-.142**										
3.	Gender = female	-.066	-.071									
4.	Ethnicity = European American	-.041	.117*	.089								
5.	Ethnicity = African American	.071	-.100*	-.115*	-.452**							
6.	Ethnicity = Hispanic American	.051	-.016	.006	-.490**	-.139*						
7.	Ethnicity = Asian American	.009	-.073	-.032	-.280**	-.080	-.086					
8.	Ethnicity = Other	-.075	-.015	-.008	-.406**	-.116*	-.125*	-.072				
9.	Education level <sup>a</sup>	-.087	.144**	-.029	.113*	-.100*	.018	.072	-.152*			
10.	Marital status = single	.039	-.491**	.011	.008	.090	-.079	.062	-.064	-.216**		
11.	Marital status = married	-.005	.319**	.017	-.020	-.093	.086	-.015	.046	.240**	-.812**	
12.	Marital status = separated/divorced/widowed	-.054	.278**	-.045	.020	.006	-.012	-.076	.029	-.039	-.302**	-.312**
13.	Information	-.036	.122*	.169**	.228**	-.202**	-.056	-.052	-.058	.116*	-.039	-.017
14.	Experience	-.003	.074	.040	.094	-.038	<.0005	-.086	-.053	.034	-.116*	.067
15.	Drive	.191**	-.231**	-.078	-.050	.023	-.024	.051	.048	-.091	.054	.027
16.	Attitude	.058	-.044	.151**	.127*	-.121*	.007	-.047	-.053	-.004	.175**	-.178**
17.	Fantasy	.165**	-.140*	.042	.024	-.043	.032	.062	-.076	.021	.054	-.025
18.	Satisfaction	-.016	.035	-.056	-.010	.050	-.035	-.037	.029	.025	-.054	.090



Table 3 (cont'd)

	Variable	12	13	14	15	16	17
1.	Theism = Theist						
2.	Age (in years)						
3.	Gender = female						
4.	Ethnicity = European American						
5.	Ethnicity = African American						
6.	Ethnicity = Hispanic American						
7.	Ethnicity = Asian American						
8.	Ethnicity = Other						
9.	Education level <sup>a</sup>						
10.	Marital status = single						
11.	Marital status = married						
12.	Marital status = separated/divorced/widowed						
13.	Information	.091					
14.	Experience	.080	.186**				
15.	Drive	-.132**	-.031	.347**			
16.	Attitude	.006	.351**	.078	.146**		
17.	Fantasy	-.048	.177**	.316**	.351**	.224**	
18.	Satisfaction	-.060	.202**	.204**	.193**	.054	.053

Note. \*  $p < .05$ ; \*\*  $p < .001$  <sup>a</sup> Spearman's correlation was used in lieu of Pearson's correlation for analysis.

### **Hierarchical Regression Model**

A two-step hierarchical binary logistic regression model was tested to address statistical hypotheses for Research Questions 1 and 2. Research Question 3 was descriptive in structure and therefore did not necessitate hypotheses testing. The first level of the regression included the control variables (i.e., age, gender, ethnicity, and education level, and marital status). Age was mean-centered prior to model placement. Gender, ethnicity, and education level and marital status were grouped according to the classifications of Table 1. The referent for the model was a male, aged 35.74 years, European American, with an education level of high school or less, and single.

Level two of the regression included all six of the DSFI variable constructs (i.e., sexual attitude, fantasy, satisfaction, drive, information, and experiences). Findings from level two of the regression were used to address the null hypotheses of Research Questions 1 and 2. The criterion variable was theism, coded as 0 = theist, and 1 = nontheist. Significance was set at the 95% level ( $p < .05$ ).

Table 4 presents the findings from the logistic regression analysis and includes the raw model coefficients and standard errors, Wald-statistics and p-values, and odds ratios and associated 95% confidence intervals for each of the variables. A test of the step 1 model with the control variables of gender, ethnicity, education level, marital status, and age against a constant only model (no predictors, and assuming all respondents were theists) was statistically significant according to the Omnibus Tests of Model Coefficients,  $\chi^2(9) = 20.63$ ,  $p = .014$ , indicating that the control variables, as a set, reliably differentiated between respondents classified as theists and respondents classified as nontheist. The step 1 model's goodness-of-fit was also assessed using the Hosmer and

Lemeshow Test,  $\chi^2 (8) = 5.91, p = .657$ . For this test, a p-value greater than .05 indicates the data fits well with the model. Therefore, goodness-of-fit was indicated for the step 1 model.

Variability of the step 1 model was assessed using two statistics, Cox and Snell R-Square ( $R^2 = .050$ ) and Nagelkerke R-Square ( $R^2 = .107$ ). These two tests indicated that between 5% and 11% of the variability in the dependent variable was explained by the predictors of the step 1 model. Percentage accuracy in classification (PAC) of the correct outcome category of nontheist for the step 1 model was 90.6%, which was not an improvement over the base model constant only (no predictors, all cases reported as being theists) percentage correct, also 90.6%.

Wald statistics indicated that only the mean centered age control was significantly associated with the outcome of nontheist [ $B = -0.04, OR = 0.96, 95\% CI OR = (0.92, 0.99); p = .044$ ]. The odds ratio indicated that each one year increase in age from the average of 35.74 years was associated with a 4% less likelihood of a respondent being nontheists. Hence, respondents tended to become more theist as age increased.

A test of the step 2 model with the added predictors from the DSFI was statistically significant,  $\chi^2 (6) = 18.98, p = .004$ , indicating that the variables entered into the step 2 block significantly improved the model fit over the step 1 model. The test of the full step 2 model (the predictors of steps 1 and 2 together) was also statistically significant [ $\chi^2 (15) = 39.61, p = .001$ ].

The step 2 model's goodness-of-fit was also assessed using the Hosmer and Lemeshow Test,  $\chi^2 (8) = 4.14, p = .844$ . For this test, a p-value greater than .05 indicates

the data fits well with the model. Therefore, goodness-of-fit was indicated for the step 2 model.

Variability of the step 2 model was assessed using two statistics, Cox and Snell R-Square ( $R^2 = .093$ ) and Nagelkerke R-Square ( $R^2 = .201$ ). These two tests indicated that between 9% and 20% of the variability in the dependent variable was explained by the predictors of the step 2 model. Percentage accuracy in classification (PAC) of the correct outcome category of nontheist for the step 2 model remained at 90.6%, which was not an improvement over the base model constant only (no predictors, all cases reported not using protection) percentage correct, also 90.6%.

Wald statistics indicated that two predictors were significantly associated with the outcome of nontheist. Drive was significant [ $B = 0.09$ ,  $OR = 1.10$ , 95% CI  $OR = (1.02, 1.18)$ ;  $p = .011$ ]. The odds ratio indicated that each 1 point increase in the drive variable was associated in a 10% greater likelihood of a respondent being classified as nontheist. The drive variable was coded such that higher scores were associated with greater frequency of sexual activities. Thus, increases in sexual activity were associated with a greater likelihood of a respondent being nontheist.

Fantasy was also statistically significant [ $B = 0.11$ ,  $OR = 1.12$ , 95% CI  $OR = (1.02, 1.23)$ ;  $p = .020$ ]. The odds ratio indicated that each 1 point increase in the fantasy variable was associated in a 12% greater likelihood of a respondent being classified as nontheist. The fantasy variable was coded such that higher scores were associated with a greater number of fantasy types. Thus increases in the types of sexual ideas and fantasies were associated with a greater likelihood of a respondent being nontheist.

Table 4

*Hierarchical Logistic Regression of Theism Regressed on Covariates and Independent Predictor Variables (N = 404)*

Step/Variable	B	SE B	Wald $\chi^2$	Sig.	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
<b>Step 1</b>							
Gender = female	-0.59	0.42	2.00	.158	0.56	0.25	1.26
Ethnicity = African American	0.50	0.53	0.90	.343	1.65	0.58	4.68
Ethnicity = Hispanic American	0.46	0.50	0.84	.360	1.59	0.59	4.26
Ethnicity = Asian American	-0.10	0.83	0.02	.903	0.90	0.18	4.62
Ethnicity = Other ethnicity	-1.38	1.06	1.68	.194	0.25	0.03	2.02
Education level	-0.31	0.21	2.17	.141	0.73	0.48	1.11
Marital status = Married	0.66	0.46	2.05	.152	1.92	0.79	4.71
Marital status = Separated/divorced/widowed	0.21	0.88	0.05	.816	1.23	0.21	7.15
Age (mean centered)	-0.04	0.02	4.04	.044	0.96	0.92	0.99
<b>Step 2</b>							
Information	-0.03	0.06	0.17	.681	0.98	0.87	1.10
Sexual experience	-0.04	0.03	1.56	.211	0.96	0.90	1.02
Drive	0.09	0.04	6.53	.011	1.10	1.02	1.18
Attitude	0.03	0.03	0.86	.354	1.03	0.97	1.08
Fantasy	0.11	0.05	5.45	.020	1.12	1.02	1.23
Satisfaction	-0.05	0.09	0.27	.603	0.96	0.81	1.13
Constant	-3.06	1.28	5.69	.017	0.05	---	---

*Note.* Sig. = Significance; CI = Confidence Interval.

The referent for the model was a male, aged 35.74 years, European American, with an education level of high school or less, and single.

### Hypothesis Testing

The findings of the hierarchical logistic regression model were used to test the null hypotheses of Research Questions 1 and 2. Research Question 3 was descriptive in

scope and therefore statistical hypothesis testing was not performed to address Research Question 3. However, a descriptive conclusion is included for Research Question 3.

The results of the hypothesis tests are presented according to each research question and associated statistical hypotheses.

### **Findings as relate to Research Question 1.**

*RQ1:* In a binary logistic regression, to what extent are theists and nontheists correctly differentiated by sexual functioning subscale scores of sexual experience, drive, attitude, information, fantasy, and satisfaction?

*H<sub>0</sub>1:* In a binary logistic regression, sexual experience, drive, attitude, information, fantasy, and satisfaction subscale scores will not be statistically significantly better than the constant only model in correctly differentiating theists and nontheists.

*H<sub>1</sub>1:* In a binary logistic regression, sexual experience, drive, attitude, information, fantasy, and satisfaction subscale scores will be statistically significantly better than the constant only model in correctly differentiating theists and nontheists.

Hypothesis 1 was tested within the second level of the hierarchical logistic regression using the survey results pertaining to the relationship between theism and sexual self-expression and behaviors, which was measured through the six variable constructs of the DSFI. The variable constructs of drive and fantasy were statistically significant.

*Conclusion as relates to Null Hypothesis 1.* Reject Null Hypothesis 1. There is sufficient evidence to indicate that sexual experience, drive, attitude, information, fantasy, and satisfaction subscale scores as a whole, entered into step 2 of the model,

were statistically significantly better than the constant only model in correctly differentiating theists and nontheists.

### **Findings as relates to Research Question 2.**

*RQ2:* To what extent does a set of demographic variables (age, gender, religious affiliation, marital status, ethnicity, and education level) improve the differentiation of theists and non-theists after controlling for the multi-dimensional sexual functioning subscale scores?

*H<sub>0</sub>2:* In a hierarchical binary logistic regression, the block effect of the set of demographic variables will not be statistically significant.

*H<sub>1</sub>2:* In a hierarchical binary logistic regression, the block effect of the set of demographic variables will be statistically significant.

Hypothesis 2 was tested within the first level (step 1) of the hierarchical logistic regression using the survey results pertaining to the relationship between theism and the control variables of age, gender, ethnicity, education level, and marital status. The step 1 block was statistically significant when compared to a baseline model. The variable of age was statistically significant for the step 1 block.

*Conclusion as relates to Null Hypothesis 2.* Reject Null Hypothesis 2. There is sufficient evidence to suggest that the block effect of the set of demographic variables was statistically significant.

### **Findings as relates to Research Question 3.**

*RQ3:* What is the best model of sexual functioning subscale scores and demographic variables for correctly differentiating theists and nontheists?

Significant variables in the logistic regression model included (a) age, which was mean centered, (b) drive, and (c) fantasy. For this particular sample of  $N = 404$  respondents, the significant findings suggest that increases in sexual drive and the types of fantasies a person has are associated with a person self-reporting that they are nontheist. However, increases in age are associated with a person self-reporting that they are theist.

*Conclusion as relates to Research Question 3.* The significant findings of the logistic regression model suggest that the best predictors of a person's theism can be determined with variables of age, drive, and fantasy. However, the pseudo R-square values of the final model were between 9% and 20%, and these numbers suggest the 80 to 90% of the theism criterion may be explained by latent variables that were not included in the model. So, although the three predictors of age, drive, and fantasy were statistically significant, the findings did not account for much of the "noise" in the model. Also, the findings were not obtained from random sampling and cannot be generalized to the population.

### **Summary**

Chapter 4 began with a description of the sample ( $N = 404$ ) and presentation of demographic and descriptive findings. Following the descriptive reporting, changes to the scoring of the DSFI tool, internal consistency reliability of the tool, and a presentation of the measures of central tendency, variability and Cronbach's alpha coefficients for internal consistency reliability were presented in Table 2. Assumptions for the inferential analyses were then presented and discussed. Following the descriptive and assumption



sections, a hierarchical logistic regression was performed to test the null hypotheses of the two research questions of study.

Significance was found in the regression model for three variables of (a) age, (b) drive, and (c) fantasy. Null Hypothesis 1 and Null Hypothesis 2 were rejected, and therefore Research Questions 1 and 2 were supported with the model findings. A discussion of the results as well as implications of the findings as it relates to the literature review and further research is presented in Chapter 5.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

The purpose of this quantitative, cross-sectional, correlational research study was to examine the relationship between religiosity and sexual attitudes and behaviors among theists and nontheists. I used a quantitative design and a survey methodology to collect data. Existing historical research pertaining to the relationship between sexuality and religiosity is limited but recent studies have shown a correlation between religiosity and sexual attitudes and expressed sexual behaviors (Ray, 2012). In this research, I sought to discover the extent to which religious teachings and practices influence human sexuality, both in terms of thoughts and attitudes, and in terms of engagement in various forms of expressed sexual behaviors. Exploring this relationship was essential as it helps contribute knowledge to a better understanding of the human sexual-maturation process and increasing the knowledge related to the degree to which religious influences contribute to sexual behaviors and attitudes toward sexuality, which in turn, promote healthy psychosexual development. In this chapter, I interpret the key findings presented in Chapter 4. Additionally, I review limitations of the research, make recommendations for future research, and discuss implications for positive social change.

### **Interpretation of the Findings**

I developed three primary research questions for this study.

#### **Research Question 1**

In a binary logistic regression, to what extent are theists and nontheists correctly differentiated by sexual functioning subscale scores of sexual experience, drive, attitude, information, fantasy, and satisfaction?

I used a two-step hierarchical binary logistic regression model to address the first research question. The research findings indicated that sexual experience, drive, attitude, information, fantasy, and satisfaction subscale scores as a whole, entered into Step 2 of the model, were statistically significantly better than the constant only model in correctly differentiating theists and nontheists.

The null hypothesis for Research Question 1 was that in a binary logistic regression, sexual experience, drive, attitude, information, fantasy, and satisfaction subscale scores will not be statistically significantly better than the constant only model in correctly differentiating theists and nontheists. The alternative hypothesis for Research Question 1 was that in a binary logistic regression, sexual experience, drive, attitude, information, fantasy, and satisfaction subscale scores will be statistically significantly better than the constant only model in correctly differentiating theists and nontheists. I tested Hypothesis 1 in the second level of the hierarchical logistic regression using the survey results pertaining to the relationship between theism and sexual self-expression and behaviors, which was measured through the six variable constructs of the DSFI. The variable constructs of drive and fantasy were statistically significant. As a result, the null hypothesis for Research Question 1 was rejected.

### **Research Question 2**

To what extent does a set of demographic variables (age, gender, religious affiliation, marital status, ethnicity, and education level) improve the differentiation of theists and non-theists after controlling for the multi-dimensional sexual functioning subscale scores?

I used a two-step hierarchical binary logistic regression model to address the second research question. The research findings indicated that the block effect of the set of demographic variables was statistically significant. The null hypothesis for Research Question 2 was that in a hierarchical binary logistic regression, the block effect of the set of demographic variables will not be statistically significant. The alternative hypothesis for Research Question 2 was that in a hierarchical binary logistic regression, the block effect of the set of demographic variables will be statistically significant. Hypothesis 2 was tested in the first level (Step 1) of the hierarchical logistic regression using the survey results pertaining to the relationship between theism and the control variables of age, gender, ethnicity, education level, and marital status. The Step 1 block was statistically significant when compared to a baseline model. The variable of age was statistically significant for the Step 1 block. As a result, the null hypothesis for Research Question 2 was rejected.

### **Research Question 3**

What is the best model of sexual functioning subscale scores and demographic variables in correctly differentiating theists and nontheists?

Research Question 3 was descriptive in scope and therefore I did not perform statistical hypothesis testing to address it. However, I included a descriptive conclusion for Research Question 3. The significant findings from the logistic regression models indicated that the best predictors of a person's theism can be determined with variables of age, drive, and fantasy. Additionally, the significant findings showed that increases in sexual drive and the types of fantasies a person has are associated with a person self-reporting that they are nontheist, and increases in age are associated with a person self-

reporting that they are theist. The significant findings of the logistic regression model indicated that the best predictors of a person's theism can be determined with variables of age, drive, and fantasy. However, the pseudo R-square values of the final model were between 9% and 20%, and these numbers indicated the 80% to 90% of the theism criterion may be explained by latent variables that were not included in the model. So, although the three predictors of age, drive, and fantasy were statistically significant, the findings did not account for much of the "noise" in the model. Also, the findings were not obtained from random sampling and cannot be generalized to the population.

The results from these three aforementioned research questions showed a correlation between various components of sexual functioning between theists and non-theists, two out of the three specific hypotheses which served as the basis for this research endeavor. The data I obtained to answer Research Question 1, for example, showed that scores from specific subscales including sexual experience, drive, attitude, information, fantasy, and satisfaction varied between theists and nontheists. In particular, drive and fantasy variable constructs were statistically significant. In the interpretative analysis of Step 1 of the logistic regression model, the only significant variable was age. The value of the odds ratio indicated that each 1 year of age above the average age of 35.74 years is associated with approximately a 5% decrease in the likelihood of being a non-theist. In other words, as people get older, the more likely they are to become theists. Existing research supports this finding and likewise has shown a positive correlation between age and theism (Argue, Johnson, & White, 1999; Bengton et al., 2015; Ideler, 2006; Ingersoll-Dayton, Krause, & Morgan, 2002; Krause, 2008; Levin & Taylor, 1997, Sherkat, 2010; Wuthnow, 2010).

Step 2 findings of the logistic regression model showed the significance of the variables of drive and fantasy. Age remained significant; as individuals grow older, the more likely they are to be theist. Drive was statistically significant in that the research indicated that people with greater drive are more likely to be non-theists. Fantasy was likewise statistically significant in that the research showed that people with more fantasies listed in the survey were more likely to be non-theists. Existing research literature supports these findings, specifically the findings that support a correlation between sex drive, the presence of sexual fantasies, and theism (Ahrold & Meston, 2010; Ahrold et al., 2011; Brotto et al., 2005; Heelas, 2002; Froese, 2004; Leitenberg & Henning, 1995; Meston & Ahrold, 2010; Meston, Trapnell, & Gorzalka, 1996).

### **Theoretical Framework**

Cognitive-dissonance theory (CDT) and Self-determination theory (SDT) provided the theoretical framework for this research study. Both theories represent the two primary theories that support the variances in the motivational aspects of expressed behaviors (Deci & Ryan, 2000; Soenens et al., 2012). Both theories also address the relationship between attitudes and cognitive processes, in addition to subsequent expressed behaviors, specifically expressed sexual behaviors that I addressed in this study. In addition, I examined the possible relationship between theism and attitudes toward sexuality and sexual behaviors, in addition to a possible relationship between theism and sexual self-expression and behaviors.

A harmonic congruence between attitudes and behaviors, while simultaneously avoiding disharmony or dissonance, serves as the theoretical basis for CDT. This homeostasis between attitudes and behaviors is thought to be correlated with an improved

mental state (Acharya, Blackwell, & Sen, 2015; Aronson, 2004; Breslavs, 2013). SDT serves as a broad macrotheory of human motivation and addresses issues such as self-regulation, universal psychological needs, behavior, and well-being (Deci & Ryan, 1985, 2008).

I tested Hypothesis 1 in the second level of hierarchical logistic regression using the survey results pertaining to the relationship between theism and sexual self-expression and behaviors, which was measured through the Information and Sexual Experience subscales of the DSFI. I tested Hypothesis 2 in the second level of hierarchical logistic regression using the survey results pertaining to the relationship between theism and attitudes toward sexuality and sexual behaviors, which was measured through the Sexual Attitude, Fantasy, Satisfaction, and Drive subscales of the DSFI. By using the theoretical frameworks of CDT and SDT, this study demonstrated a relationship between theism and sexual self-expression and behaviors in addition to attitudes towards sexual behaviors and sexual attitudes.

In accordance with CDT, the tenets of one's religion will most likely dictate the range of acceptable sexual practices in a wide variety of applicable settings such as sexual behaviors within the confines of marriage, abstinence in sexual behaviors while outside of marriage, and specific sexual practices within both parameters (Cyr & Karnehm Willis, 2010). The results from this study demonstrated these relationships, specifically, that sexual attitudes and expressed sexual behavior variances between theists and non-theists existed particularly in the realm of sexual drive and sexual fantasies.

In accordance with SDT, determining why and how people engage in particular behaviors and the subsequent effect these behaviors have on individual well-being and

personal growth serve as viable questions. One of the mini-theories that falls under SDT is basic needs theory, which focuses on the intersection between an individual's needs and how these needs subsequently relate to personal growth and overall well-being (Smith, 2007). Sexual interactions effectively serve as a venue through which the individual's needs can be met. Existing research has shown that the needs posited in accordance with SDT may be of importance to what the individual reports as positive sexual outcomes (Apt et al., 1996; O'Sullivan & Allgier, 1998; Sanchez, 2005; Schnarch, 1994). The results from this study support a SDT framework when examining sexual thoughts and expressed sexual behaviors.

### **Limitations of the Study**

Research limitations are defined as occurrences and complications within the study that are beyond the control of the researcher (Creswell, 2013; Patton, 2001; Price & Murnan, 2004).

#### **Internal Validity**

One limitation of the research was that despite the assurance of complete anonymity as part of their participation in the study, research subjects were provided with no incentives, financial or otherwise, to provide completely genuine and transparent responses. Providing research subjects with a provision of anonymity has been documented to increase the disclosure rates of sensitive information (Beatty, Chase, & Ondersma, 2014; Durant et al, 2002, Lau et al., 2003, Lewis et al., 2011, Tourangeau et al., 1997). However, research studying the effects of incentives specifically with web-based surveys supported the use of incentives and incentive schemes in order to achieve higher response rates (Cook, Heath, & Thompson, 2000). Relatedly, with an idyllic



higher response rate, the greater the assurance that the sample of research subjects reflects that natural distribution of the larger population (Draugalis, Coons, & Plaza, 2008) which will be discussed in greater detail under the auspices of external validity.

An additional limitation was lack of control of the actual testing environment. Although participant anonymity was assured, the research subject may not have engaged in self-protection measures to ensure their privacy while completing the survey. For example, if the survey was completed in an open public venue, potentially subjecting the participant to prying eyes or public scrutiny, participants may not have responded to questions in a completely transparent and honest manner.

An additional limitation relates to those participants who possibly did not take their role in the research study in a serious manner, or presented with confusion regarding a certain question, or rushed through the survey in order to complete it. For example, it is unknown whether some subjects may have engaged in satisficing whereby the respondent provided quick responses as opposed to carefully considering their responses (Hamby & Taylor, 2016).

Another limitation of the research may be that due to the content of the study, specifically in the form of religiosity, research participants who adhere to a more polar orientation on the religiosity spectrum may have been more prone to participate in the research study, for example, those participants who identify as very religious or not religious at all.

Another proposed limitation relates to survey research inclusive of self-reported data, specifically, social desirability. Social desirability suggests that the majority of individuals present with the natural internal motivation to represent themselves in a

favorable social light, thus demonstrating greater adherence to the prevailing social norms (King & Bruner, 2000). As a result, social desirability could potentially have lead study participants to report variations in their sexual behaviors, particularly in reference to perceived normalcy, as it relates to their participation in sexual behaviors.

### **External Validity**

Generalizability for this study would be threatened due to the fact that participation in the research was limited to those subject participants who had readily available access to the internet, understood the nuances and skills involved in internet navigation, and had been solicited by Survey Monkey for participation in an online research study. Possible research participants who presented with no readily available access to an internet capable device used to participate in the research, were therefore automatically excluded from the study.

Another limitation was that due to the sensitive nature of the survey content, for example, content that pertained to the individual participant's attitudes and thoughts towards sex in addition to their self-disclosure as it relates to various sexual behaviors, some of the solicited research participants may have chosen not to participate in the research. In the event of this occurrence, it would have created a self-selection bias. Self-selection bias reflects a research phenomenon in which the participant decides autonomously whether he or she wants to participate in a research study (Lavrakas, 2008). However, the employment of internet based surveys tend to demonstrate lower response bias and higher response rates as compared to other forms of sampling (Sax, Gilmartin, Lee, & Hagedorn, 2003).

### **Recommendations for Future Research**

Based on the research findings and limitations within this study, subsequent future studies are needed to explore the relationship between religiosity and sexuality. Although the sample size characteristics reflected that of the larger population in terms of self-identification as a theist or non-theist, because the sample size for this study was comprised predominately of participants who identified as theist (90.6%) as compared to those participants who identified as non-theist (9.4%), generalizability was limited therefore future research with more balanced representations of theists and nontheists is recommended. By having a larger representation of participants who identify as non-theist, it would enhance any generalizability constructs drawn from the data. In addition, the majority of participants identified as being female (74.8%) as compared to males (25.2%). Research has indicated that women tend to be more religious than men in general and cross-culturally (Beit-Hallahmi & Argyle, 1997; Francis & Wilcox, 1996, 1998; 1991; Miller & Hoffman, 1995, Miller & Start, 2002; Piedmont, 1999b; Saroglou, 2002; Taylor & MacDonald, 1999; Thompson, 1991) and related research supports the notion that religiosity presents greater behavioral influence for women than men (Beit-Hallahmi & Argyle, 1997; Collett & Lizardo; 2009; de Vaus & McAllister, 1987; Francis, 1997; Krause, Ellison, & Marcum, 2002; Miller & Hoffman, 1995; Walter & Davie, 1998). Given the more subservient role of women on a cross-cultural basis, it could be argued that this implicit obedience may contribute to explaining why women may be more prone to religiosity, given that many values of religiosity support a subservient and obedient role to the selected deity of worship (Beit-Hallahmi & Argyle, 1997). Ahrold et al. (2011) found that religiosity strongly correlates with sexual attitudes,

with religious women more likely to seek long-term partners than nonreligious women, less likely to engage in premarital sex, and likely to have fewer sexual partners across the lifespan. For women, spirituality and intrinsic religiosity were found by Ahrold and Meston (2008) to predict attitudes toward homosexuality, casual sex, and extramarital sex, with the relationship between conservative attitudes and these variables higher when spirituality and intrinsic religiosity is higher. Religiosity was found to be a better predictor of sexual attitudes in females than in males. Religiosity in women may be partially associated with an acceptance of their traditional subservient role. Opayemi (2011) found a relationship with the type of secondary school attended, with church or mosque attendance contributing to a reduced likelihood of premarital sex. As a result of this and related research findings, future research incorporating a larger male representation into the study would help address the presence of possible gender variances as it relates to religiosity.

Research participants for this study were recruited from within the United States. Due to cultural variances as they relate to religiosity and sexuality, additional research studies could seek to further explore cultural nuances, therefore obtaining a more diverse population or focusing on specific cultures in particular would likewise be worthy of future research prospects. This would be important in order to add to the existing research database on cross-cultural similarities and differences of sexual thoughts and behaviors as they are correlated specifically with the variable of religiosity. For example, several research studies have focused on the cross-cultural similarities of adult men who identify as gay within their communities. In many instances, there is a pronounced lack of specialized nomenclature for gay men as compared to straight men with gay men

essentially being undifferentiated from the straight men when it comes to regular or normalized sociocultural behaviors within the community (Cardoso, 2002, 2005, 2009a, 2009b, 2010, 2012; Cardoso & Werner, 2004, 2013; Whitam, 1983; Whitam & Mathy, 1986).

Human beings are also unique from the perspective that unlike many other animal species, particularly higher functioning primate species such as human beings, the practice of sex in an open, public setting is considered taboo whereas this social restrictor is essentially non-existent across other species (Gray & Anderson, 2010). To further differentiate specific sociocultural variables in conjunction with religiosity variables specifically within the human species would be of incredible research importance given the uniqueness of human sexuality in this regard.

An additional recommendation for future research would be to further examine the correlation between education and religiosity. While research has supported the correlation between non-theists and higher levels of education, IQ's, and cognitive abilities (Ash & Gallup, 2007; Bailey & Geary, 2009, Burnham & Johnson, 2006; Haselton & Nettle, 2006; Kanazawa, 2002, 2004, 2005, 2006, 2007, 2008, 2010; Miller & Dewitte, 2007), it would be interesting to see if intelligence alone supports these discrepancies or are cognitive style variations likewise present and if so, to what degree do they account for variances between theists and non-theists. For example, more intuitive and less reflective individuals, characteristics more commonly associated with theists, as compared to less intuitive and more reflective individuals, characteristics more commonly associated with non-theists (Bering, 2006). Research has suggested that belief in a deity or deities and the reliance on self-intuition stems from a variety of sources and

may ultimately give rise to tendencies that lean towards dualism, promiscuous teleology, and anthropomorphism (Bering, 2006, 2011; Epley, Waytz, & Cacioppo, 2007; Kelemen & Rosset, 2009, Waytz et al., 2010). Research has further demonstrated that individuals who adhere to more intuitive explanations to make sense of their world and to provide a semantic framework are more likely than non-intuitive individuals to rely upon heuristics (Frederick, 2005; Stanovich & West, 1998; Toplak, et al.). Additional studies focusing on this phenomenon would likewise serve as a worthy future research endeavor.

### **Implications for Positive Social Change**

The potential for positive social change presented by this research involves enhanced understanding of the relationship between religiosity and sexuality and whether differences between theists and nontheists exist in terms of sexual behaviors including sexual experience, drive, information, attitude, fantasy, and satisfaction. Such knowledge holds tremendous research potential and value. For example, by understanding the relationship between religiosity and sexual behaviors, we may better understand whether religiosity enhances, or perhaps socially stunts, sexual self-expression. Such expression, in turn, may play a vital role in overall psychological health, specifically by way of demonstrating a congruence between expressed behaviors and cognitive thought processes (Deci & Ryan, 2000; Soenens et al., 2012). Such knowledge may also enhance acceptance of different sexual orientations, and a decreased degree of cognitive dissonance among those struggling with sexual attitudes or behaviors that run in opposition to the religious teachings of their upbringing or their current religious affiliation. As a result, individuals may be empowered to come to terms with their

developing sexuality, which may be particularly beneficial for youth struggling with their sexual orientation or sexual self-expression.

By promoting increased understanding of the congruence and overall importance of attitudes toward sexuality and expressed sexual behaviors, individuals will be empowered to approach sexuality in a more open and honest fashion while simultaneously promoting receptivity to new knowledge, as it relates to human sexuality. The findings of the study may provide positive social change by promoting a healthier level of sexual communication between partners through enhanced communicative efforts. Sexual maladaptive behaviors may be deterred that are influenced by specific religious doctrines. A clearer understanding of this relationship may also deter behaviors associated with latent sexual risk taking.

Increased understanding of the relationship between religiosity and sexual attitudes and behaviors is likewise beneficial in promoting the acceptance of various forms of human sexuality. Such newfound knowledge can result in healthier sex lives for individuals in addition to increased communication among couples, particularly by way of increased communicative efforts as they relate to sexual expressive behaviors by the couple. The implications for positive social change of this research therefore also include a clearer understanding of the tremendous social value in terms of promoting positive sexual health among couples. Particularly noteworthy given that sexual satisfaction has been found to represent a key indicator of relationship satisfaction among couples (Butzer & Campell, 2008; Byers, 2005; Kisler & Christopher, 2008; Litzinger & Gordon, 2005; Sprecher, 2002; Yeh, Lorenz, Wickrama, Conger, & Elder, 2006).

This study was designed to effectively examine attitudes toward sexuality, in addition to the subjects' participation in sexual behaviors, and the extent to which religiosity dictates their participation or nonparticipation in such sexual behaviors. The research findings support the possible presence of cognitive incongruence as a result of participation in unorthodox sexual behaviors that contradict the tenets of a respective religious affiliation to which the individual adheres. Understanding the genesis of cognitive incongruence as it relates to sexual maturation and subsequent sexual attitudes and behaviors, may lead to enhanced positive individual well-being in addition to enhanced positive social well-being.

Positive sexual health has been recognized within the medical community as important to both physical and mental health (Hull, 2008; Lindau & Gavrilova, 2010; U.S. Surgeon General, 2001). In addition, healthy views toward sexuality and a healthy sex life have been correlated with enhanced levels of psychological well-being (Estlund & Nussbaum, 1998; Hooghe, 2012; Laumann, Gagnon, Michael, & Michaels, 1994). Furthermore, healthy sexual attitudes and behaviors may promote improved health, both physically and psychologically. Improvements included a reduction in stress levels (Burlison, Trevathan, & Todd, 2007; Hamilton, Rellini, & Meston, 2008; Lee, Macbeth, Pagani, & Young, 2009); a reduction in blood pressure (Grewen & Light, 2011; Svetkey et al., 2005); a delay in cognitive decline (Ahlskog, Geda, Graff-Radford, & Peterson, 2011; Hartmans, Comijs, & Jonker, 2014; Huppert, 2008); improved immune-system functioning (Segerstrom & Miller, 2004); a reduction in the risk for certain types of cancers, such as prostate cancer (Hyde et al., 2010; Leitzmann, Platz, Stampfer, Willett, & Giovannucci, 2004); increased levels of self-esteem (Diamond, 2003; Onder et al.,



2003); and the enhanced strengthening of interpersonal relationships (Tessler & Gavrilova, 2010).

### **Conclusion**

The purpose of this study was to examine the relationship between religiosity and sexual attitudes and behaviors among both theists and nontheists. Nontheist sexual attitudes and sexual behaviors in particular are grossly underrepresented in the research literature therefore this study proposed to address this research gap. The results from this quantitative research study advanced contemporary findings on the relationships between the presence or absence of religiosity, and sexual attitudes and behaviors and therefore contributed to the existing research literature in some fashion. In particular, significance was found in the regression model for three variables of (a) age, (b) drive, and (c) fantasy. Null Hypothesis 1 and Null Hypothesis 2 were rejected, and therefore Research Questions 1 and 2 were supported with the model findings.

The researcher hopes that by way of the previous discussion addressing the limitations and recommendations for future research, that subsequent studies aimed at studying the relationship between sexuality and religiosity, or a lack of religiosity, will continue to expand the current knowledge base in an effort to promote a better understanding of the interplay between religiosity and human sexuality and how this ultimately impacts the psychological well-being of the individual.

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## Appendix A: Demographic Questionnaire

Purpose: Your completion of this demographic study is important to determine the influence of a variety of factors. Any information you provide will be completely anonymous and confidential.

1. What is your age?

18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120

2. Indicate your gender.

Female, Male, Non-binary/third option, Prefer to self-describe\_\_\_\_\_, Other.

3. Ethnicity.

European American, African American, Hispanic American, Asian American, Other.

4. Education level.

Some high school, high school graduate/GED, some college/technical school graduate, bachelor's degree, master's degree, doctorate degree.

5. Marital status.

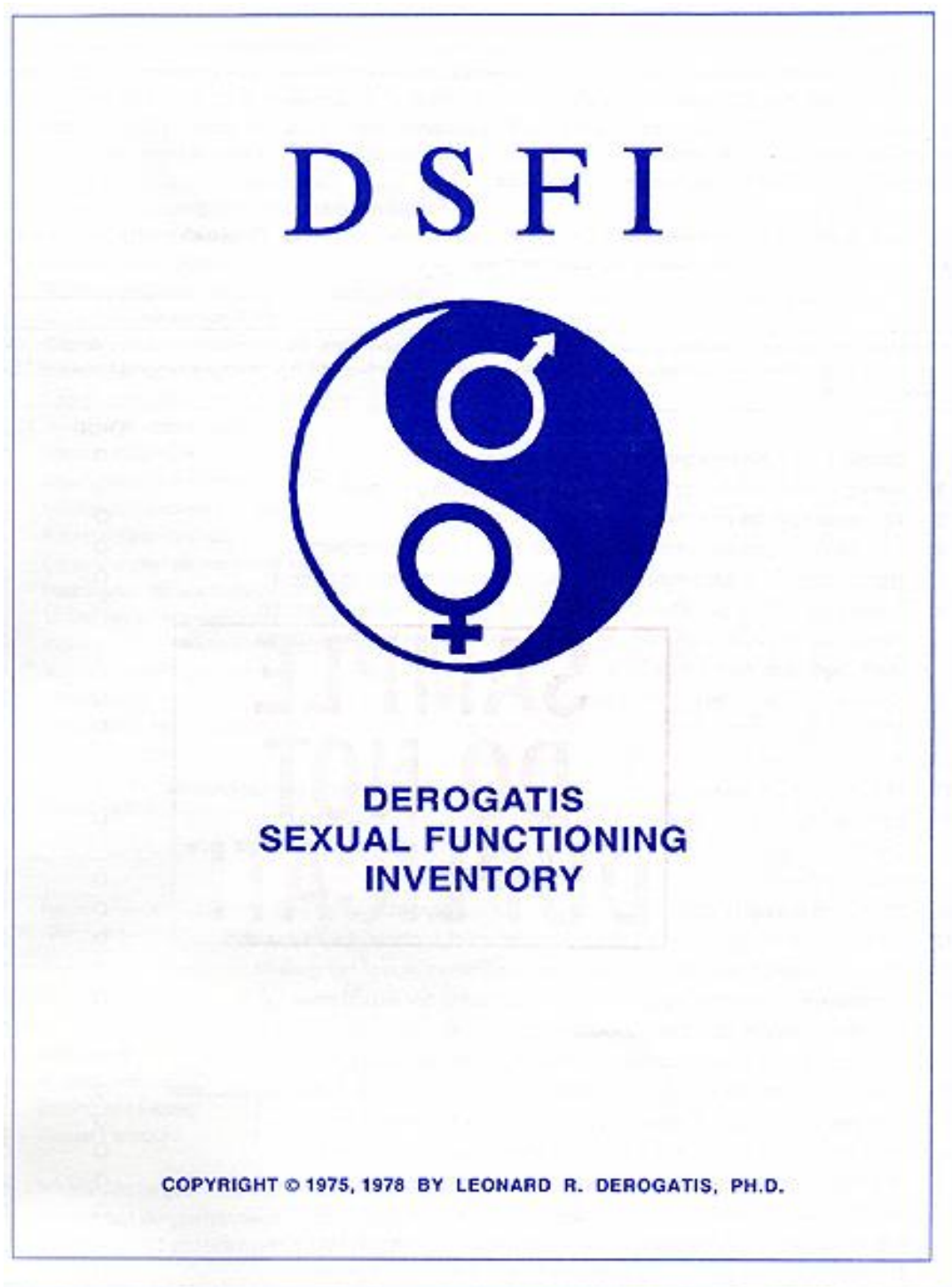
Single, married, separated, divorced, widowed.

6. Theism.

Theist, atheist, agnostic, not affiliated with a formal religion.



Appendix B: Derogatis Sexual Functioning Inventory (DSFI)



Due to copyright privileges, the DSFI is not replicated in its entirety.