THE EFFECT OF SPIRITUAL ATTITUDES ON FEMALE HYPOACTIVE SEXUAL DESIRE DISORDER

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Abstract

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This study hypothesized that there is a relationship between religious orientation (conservative, moderate, or liberal) and the occurrence of Hypoactive Sexual Desire Disorder (HSDD) among Christian women. The participants of this study were 71 married Christian women who were patients from a Christian obstetrical/gynecological medical practice in southern Georgia and who volunteered for an anonymous survey. The survey instruments used in this study included the Sexual Self-Assessment Questionnaire, the Female Sexual Function Index, and the Christian Religious Orientation Scale. Demographic information was also gathered on each participant.

Results showed that all of the women had a conservative orientation and that 59.2% of these women met the diagnostic criterion for HSDD. The rate of HSDD among conservative Christian women was noticeably higher than the occurrence of HSDD among the general female population of 33.3%. Since there were no participants identified as moderate or liberal in the sample, the participants’ religious orientation scores were not significantly related to the presence of HSDD. However, there were significant correlations found between some of the sexuality variables and some of the theological opinion variables. While the sample size is small for regression, regression models were run in an attempt to explore the available data further. The exploratory backward elimination regression model technique was used to identify which combination of independent variables serves as the best predictors for each of the
sexuality variables: (a) level of sexual desire/interest, (b) frequency of sexual desire/interest, (c) sexual energy, and (d) presence of HSDD. Since the treatment of HSDD is complex and must be individualized, a diagnosis and treatment matrix was also developed as a part of this study. It is hoped that the identification of some of the specific religious attitudes and demographic factors that are associated with the presence of HSDD will enable clinicians to have a better understanding of the factors involved in the etiology and subsequent treatment of this increasing sexual problem.
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Dedicated to my beloved wife JoAnne for all the unrecognized sacrifices she has made for the completion of this paper.
# TABLE OF CONTENTS

CHAPTER I INTRODUCTION

- Purpose of the Study ................................................................. 15
- Hypotheses and Research Questions ......................................... 16
- Definitions of Terms .................................................................. 18
- Significance of the Study ............................................................ 19

CHAPTER II REVIEW OF THE LITERATURE ........................................... 21

- Historical Development of the Diagnosis - ................................. 21
- From the DSMIII, to the DSM IV and Beyond .............................. 21
- The Modern Study of Human Sexuality ...................................... 22
- Definition of Desire ...................................................................... 25
- The Role of Fantasy in Sexual Desire .......................................... 27
- The Role of Sex in Marriage ....................................................... 28
- The Hunt for a Female Viagra and the Boston Forum Debates .... 29
- Biological Etiology ...................................................................... 31
- Insights from the Study of Phylogenesis ..................................... 36
- Insights from the Study of Ontogenesis ..................................... 37
- Insights from Gender Based Studies ......................................... 38
- Psychological Etiology ............................................................... 40
- Insights from the Study of Co-morbid Diagnoses ....................... 41
- Insights from Social History ...................................................... 44
- Attachment Theory ................................................................. 47
- The Theory of Rosemary Basson .............................................. 48
- The Relationship between Treatment and Further Research ...... 49
- The Christian Perspectives ....................................................... 50

CHAPTER III METHODOLOGY ................................................................. 53

- Population and Sample ............................................................ 53
- Instruments ............................................................................... 53
- Procedures ............................................................................... 57
- Design ...................................................................................... 59
- Data Analysis ............................................................................ 60
- Limitations and Delimitations ................................................... 61

CHAPTER IV RESULTS ........................................................................ 63

- Descriptive Statistics ............................................................... 63
- Main Research Hypotheses ...................................................... 65
- Supplemental Research Questions .......................................... 66

CHAPTER V DISCUSSION ................................................................. 70

- Overview of Findings ............................................................. 71
LIST OF FIGURES

Figure 1. Arousal across time. ................................................................. 25
Figure 2. Predisposing factors (Reporters, 2003). .................................. 31
Figure 3. .................................................................................................. 35
Figure 4. Sex response cycle. ................................................................. 48
CHAPTER I
INTRODUCTION

In the first three centuries of the Christian church, early theologians began to develop and defend Christian doctrine (McKechnie, 2001). St. Augustine is understood to be the cornerstone of the western Christian tradition (Bourke, 1958; Fredriksen, 1999; Freeman, 2003). Although Augustine was influenced by Plato’s dualistic philosophy, his writings shaped the foundation for the Catholic Church regarding human sexuality (Bloom, 2004). Historians describe St. Augustine’s beliefs on sex as negative (Shlain, 2003). The German theologian, Ute Ranke-Heinemann has called him “the man who fused Christianity together with hatred of sex and pleasure into a systematic unity” (Ranke-Heinemann, 1990, p. 75). Pelikan, referring to St. Augustine’s position, states, “Sin is passed on through sexual intercourse; so that once again sexual desire is woven into evil, this time through its very transmission” (as quoted in Freeman, 2003, p. 290).

Augustine’s theology was not only shaped by Plato, but was also shaped by his own struggles with sexuality. As Anglican poet T.S. Eliot (1922) wrote, “To Carthage then I came. Burning, burning, burning, burning” The poetic reference is to Augustine’s lifelong struggles with his own sexual desires (James, 1987).

Writing in the 3rd Century, St. Augustine’s influence on the formative thinkers in the early church was vast (James, 1987; Von Blathaser, 1938). His philosophical thoughts led him to interpret most of Scripture as allegorical (Bray, 2003; McKechnie, 2001). For example, St. Augustine interpreted the Song of Solomon as an allegory for Christ and the Church (Bonner, 1970; Mortley, 1986; Smith, 2002; Freeman, 2003). This
allegorized interpretation of the Song allowed him to avoid understanding the Song as a Jewish perspective on human sexuality. He was only the first of many theologians to view sex in the Scriptures allegorically (Sweeny, 2005).

Two factors created Augustine’s concerns with sexuality. One factor was his allegorical interpretation of Scripture. The second factor was his Platonic dualism. Taken together, these factors led him to a position in which he saw intercourse as uncontrollable human passion, reflective of man’s fallen nature (LaQueur, 1990).

A connection has been hypothesized between Augustine’s sex-negative position and present day values that may be contributing to a higher degree of Hypoactive Sexual Desire Disorder among Christian women. A relevant question would be by what means has the Augustinian effect been transmitted down through the centuries to the current day. Augustinian theology, influenced by St Jerome, held that “sex, even in marriage, carried the taint of original sin...insisting that the flesh was prone to evil, and that marriage was, at best, a necessary evil (Yalom, 2001, pp. 56-57). It must be noted that a Catholic order formed that took Augustine’s theological positions so seriously that the order took the name Augustinian. It is relevant to note further that Martin Luther, one of the major movers in the Protestant Reformation, was an Augustinian monk. Augustine has had such an influence on Western philosophy that Bloom states; “Augustine has Paul as precursor, and Dante, Calvin, perhaps Luther as inheritors” (Bloom, 2004, p. 273). If society is a reflection of the major thinkers it produces, then our culture has always had an Augustinian influence.
The Catholic Church has been a major force in the forming of Western civilization (Woods, 2005). The rule of law is at the core of civilization, best expressed in the power of law and the rule of the court (Bloom, 2004; Horowitz, 2002). Western civilization owes much to Roman law (Woods, 2005). However, the Catholic Church did much to add a Christian ethic to the bloody Roman law that the Catholic Church inherited through ecclesiastical courts and canon law. Indeed, it is impossible to understand many Western legal provisions without seeing them within the context of the theology that created them. Berman (1983) states, the modern legal systems “are a secular residue of religious attitudes and assumptions which historically first found expression in the liturgy and rituals and doctrine of the church and thereafter in the institutions and concepts and values of the law. When these historical roots are not taken into account, many parts of the law appear to lack any underlying source of validity (p. 166).

Origen, another Church father was also affected by Platonic thinking (Franke, 2003). Writing in the 3rd century, Origen stated that the soul is pre-existent from the body (Franke, 2003). Origen argued this position using Middle Platonic logic (Hinson, 1996). The Platonic argument has at its core the idea that the flesh/body is corrupt or bad. Origen believed that it was optional for God to send a soul to Earth. He believed this because he held that if a soul was sent to Earth and joined to a body, God had merged a pure soul with a sinful human body. Origen held such a low opinion of the flesh that he is reported to have castrated himself (Porter, 2003, p. 36).
Such low opinions of human sexuality by the early church fathers would be expected to affect sexual attitudes on the part of laity in the early church, mostly likely through the means of sermons (Horowitz, 2002). St. Augustine opposed sex in marriage such that he suggested prostitution should be allowed so that pure Christian women need not be dirtied by having intercourse with their husbands (James, 1987; Augustine, 1995). This is an example of two contradictory beliefs: first that sex is bad and second that Christian women were more pure than men (MacCulloch, 2003).

The Catholic Church had an unchallenged influence on the Western world throughout the Middle Ages (MacCulloch, 2003). Woods (2005) stated that it is only as the influence of the Catholic Church faded after the Middle Ages that its control during the Middle Ages became clear. By the 6th century, low opinions of human sexuality had framed the early church’s position on human sexuality (Freeman, 2003). The Catholic Church in the Middle Ages had developed a formal priesthood and regular confession to a priest was a rite of the Catholic Church. Priests were examining the laity for sin using Books of Penitentials, which were lists of sins that a priest could use to help interrogate church members in the confessional process (McDonnell, 1993). While these lists were not limited to sexual sins, sexual activity was a major focus with most sexual activity framed as a sin (McDonnell, 1993). As a consequence, the process of confession by the Catholic Church continued to frame sexuality as a sin in the minds of Catholic laity (McDonnell, 1993). The Catholic Church held sway throughout the Middle Ages. Its influence only passed with the Enlightenment in the Eighteenth Century (Woods, 2005).
The growth of cities in Western Europe and later North America created large numbers of people living in close proximity. The emerging middle class favored “appropriate public behavior that sought to remove overt sexuality from the public arena” (Horowitz, 2002, p. 8). The proximity of people living in an urban environment increased the ease of communication in large cities that gave rise to an exchange of ideas as never before. As the culture reacted to the new ideas, the civil law was the means by which unacceptable behavior was suppressed (Horowitz, 2002).

In summation, it is hypothesized that the Augustinian effect has been transmitted to the current day through a combination of factors. The Catholic Church and the rule of law, has been a prime mover in carrying Augustine’s influence down through the ages. As the power of the Catholic Church waned after the Protestant Reformation, the inclusion of sex-negative attitudes was carried forward in society by civil law.

By the late 1800’s and continuing into the early 1900’s, human sexuality had become a forbidden subject. While some scholars today dispute the degree of sexual repression in Victorian times (Cott, 1979; Foucault, 1978; Yalom, 2001), it is certain that the Victorian era marks a low point in the freedom of sex discussion--indeed, in the very freedom of sexuality (Foucault, 1978). During the Victorian period, proper women were not to like sex or even possess a sex drive (Cott, 1978).

The Enlightenment created the possibility of a more formal effort to study sex (Ruse, 2005; Woods, 2005). Starting with the Enlightenment and continuing until the end of World War II, the Catholic Church’s hold on society had weakened to the point
that scholastic study of human sexuality became possible (Porter, 2003). The scientific revolution separated the physical realm from the spiritual in formal studies. Science has the foundational premise that theories must be tested to be proved. Since religion has faith at its core, the scientific revolution of necessity compartmentalized all subjects that were deemed religious (Ruse, 2005). The new separation of church and state allowed for the scientific study of subjects that had previously been taboo. The 19th century introduced Freud’s claim that the ultimate secret of the self was sexuality (Porter, 2003). Early sexuality researchers such as Havelock Ellis and Alfred C. Kinsey emerged only late in the 19th and early 20th centuries.

Soon, studies examining the causative links between religious thinking and sexual attitudes began to be conducted. Bassett et al. (1999) found a causative link between religious thinking and sexual attitudes. With the title, “Thou shalt not like sex”, the research examined sexually negative attitudes and how they are affected by marital status. The study observed a correlation between negative sexual attitudes and extramarital sexual activity among younger Christian college students. The degree of negative sexual attitudes decreased with age. The older Christian college students were more accepting in their attitudes concerning extramarital sexual activity.

In a longitudinal study utilizing a control group, Story (1979) found that exposure to university-level human sexuality courses resulted in significant positive changes in the students’ attitudes about the behaviors of both themselves and others. A more recent study by Hannon et al. (1999) found that exposure to positive attitudes and education in college level human sexuality courses resulted in significant positive
changes in the students' attitudes about human sexuality. This finding was consistent with the results of the previous study.

Recent research suggests that the social attitudes in the American religious community are moving in the direction of integrating with the culture of the wider society (Bartkowski, 1997; Everton, 1999; Hunter, 1987). Central to the current study are gender issues, patriarchal role issues and the doctrine of wifely submission (Bartkowski, 2001, 2004). A single issue such as a patriarchal based division of household labor may affect marital intimacy (Bartkowski, 1999). However, further research is necessary to explore the possibility that the attitudes to which women are exposed in their spiritual experiences may play a role in their sexuality. The possibility exists that certain spiritual attitudes may affect their level of sexual desire. Attitudes and beliefs formed during Christian experience may influence religious orientation.

Purpose of the Study

The purpose of this study is to explore the relationship between religious orientation as defined by American religious community and attitudes on human sexuality. Clinicians are seeing a surge in the diagnosis of Hypoactive Sexual Desire Disorder (HSDD) (Kaplan, 1995) and research exploring the various causative factors is essential. Some Christian researchers dismiss the possibility that religious values have any negative effects on female sexuality (Hart et al., 1998). However, if research reveals that religious attitudes and orientation affect the occurrence of HSDD among Christian women, clinicians would benefit from research studies designed to determine both the individual beliefs and the modes of transmission so the attitudes can be addressed in
the therapeutic setting. In order to do so, the factors involved must be isolated by rigorous scientific research.

For the purpose of this paper, the hypothesized effect of the Church’s negative influence on sexual attitudes was analyzed using insights gained from a linear historical perspective. In this study, the relationship between Christian religious orientation (CROS) and the occurrence of HSDD among Christian women was explored. Since the treatment of HSDD is complex and must be individualized, a diagnosis and treatment matrix was also developed as a part of this study. Clinicians can use this matrix to identify the variables contributing to HSDD on a case-by-case basis.

Hypotheses and Research Questions

It is hypothesized that there is a relationship between religious orientation and the occurrence of HSDD among Christian women. This hypothesized relationship will be investigated by examining the relationships between the participants’ scores on selected sexuality variables (presence of HSDD, level of sexual desire/interest, frequency of sexual desire/interest, and sexual energy) and the participants’ scores on the religious orientation variables (CROS scores and responses to individual CROS items (theological opinion variables), Religious Orientation Self-rating scores, and Total Religious Orientation scores). The specific hypotheses of the present study follow:

**Research Hypothesis 1:** The occurrence of HSDD among Christian women will be positively related to their religious orientation.

**Null Hypothesis:** There is no relationship between the occurrence of HSDD among Christian women and their religious orientation.
Research Hypothesis 2: The frequency of sexual desire/interest of Christian women will be positively related to their religious orientation.

Null Hypothesis: There is no relationship between the frequency of sexual desire/interest of Christian women and their religious orientation.

Research Hypothesis 3: The level of sexual desire/interest of Christian women will be positively related to their religious orientation.

Null Hypothesis: There is no relationship between the level of sexual desire/interest of Christian women and their religious orientation.

Research Hypothesis 4: The sexual energy of Christian women will be positively related to their religious orientation.

Null Hypothesis: There is no relationship between the sexual energy of Christian women and their religious orientation.

Other supplemental research questions that this study addressed included:

1. Will the occurrence of HSDD among Christian women be higher than the occurrence of HSDD among the general female population (33.3% as noted in the DSM-IV)?

2. How are the sexuality variables (presence of HSDD, frequency of sexual desire/interest, level of sexual desire/interest, and sexual energy) related to the demographic variables, including: (a) age, (b) educational level, (c) income level, (d) number of years married, (e) times married, and (f) number of years of church membership?
3. How do the sexuality variables relate to the participants’ theological opinion variables (participants’ responses to individual CROS items)?

4. Which combination of independent variables (religious orientation and demographic) serve as the best predictors for level of sexual desire/interest of Christian women?

5. Which combination of independent variables serves as the best predictors for frequency of sexual desire/interest of Christian women?

6. Which combination of independent variables serves as the best predictors for the sexual energy of Christian women?

7. Which combination of independent variables serves as the best predictors for the occurrence of HSDD among Christian women?

Definitions of Terms

The Diagnostic and Statistical Manual (DSM)-III had originally labeled a low level of sexual desire as Inhibited Sexual Desire. The diagnostic label was changed to Hypoactive Sexual Desire Disorder in the DSM-IV. The term HSDD will be used in this paper except where quotes from pre-DSM-IV sources use the previous diagnostic label.

The women who participated in this study self-identified as being Christian. The fact that they are married is a matter of public record and the participants were expected to identify as married. Only married women were used in this study.

The Christian religious orientation of the women in this study was determined by their Total Religious Orientation Score (TRO), which was derived by calculating the average of the sum of their CROS and Religious Orientation Self-rating scores.
Christian religious orientation was operationally defined as follows: participants were categorized as conservative if their TRO score was between 1.0 and 3.95; moderate if their TRO score was 3.96 to 4.95; and liberal if their score was between 4.96 and 7.0.

For the purpose of this study, participants were diagnosed with HSDD according to their responses to the first two items on the Female Sexual Function Index (FSFI). A participant had to respond with a 1 (almost never or never) or 2 (a few times, less than half the time) to the first item, describing their frequency of sexual desire/interest during the past four weeks and/or a 1 (very low or none at all) or 2 (low) to the second item describing their level of sexual desire during the past 4 weeks.

Sexual energy was a sexuality variable that was created for this study. Sexual energy was operationally defined as the product of multiplying a participant’s score on the first item of the FSFI (frequency of sexual desire/interest) by the participant’s score on the second item of the FSFI (level of sexual desire/interest).

Significance of the Study

The issue of marriage is one that impacts religious families, American society and the broader culture. Of all the issues in the treatment of marital concerns, the ones presenting the most challenge to the clinician are problems of a sexual nature (Kolodny, 1979; LoPiccolo, 1980; Schreiner-Engel & Schiavi, 1986). And, of the diverse sexual problems that are found in clinical work, by far the most prevalent is hypoactive sexual desire in women. (Schreiner-Engel & Schiavi, 1986, p. 646). The DSM IV-TR states that “33% of females [suffer from] hypoactive sexual desire” (APA 2000, p. 538). Other population studies agree that the incidence is between 30%-35% (Fugl-Meyer et al.,
Of all the sexual disorders, HSDD has the highest incidence of sexual dysfunction as noted in the DSM IV-TR. Previously, the DSM III put the percentage at 20% of the total (male and female combined) population (APA, 1987, P. 292) (Kolodny, 1979). However, the prevalence of the diagnosis is increasing (Spector & Carey, 1990; Kaplan, 1995). One recent study noted 63% of women claiming difficulties in the desire phase (Bechara et al., 2001). Another study from Brazil found a 58% predominance of hypoactive sexual desire disorder in women over 40 years of age (Lopez & Torres, 1999). The rise in diagnostic frequency is possibly due to the disorder being diagnosed with more frequency; since the research does not imply that the disorder is increasing in occurrence (Spector & Carey, 1990). The current study will seek to investigate the possibility of correlational links between religious opinion variables among Christian women and HSDD. Research in this area may open new opportunities for treatment in this population.
CHAPTER II

REVIEW OF THE LITERATURE

Historical Development of the Diagnosis—

From the DSMIII, to the DSM IV and Beyond

Saint Augustine lived in a culture strongly influenced by Platonic Forms. Plato’s tripartite philosophical theory stated “the soul split into three parts: a reasoning part, another sensual part based on desire (hunger, thirst, sex) and a third on spirit, which encapsulated emotions such as anger and the desire for honor and reputation” (Freeman, 2003, p. 30). The three levels were defined as hierarchical with the reasoning level being the apex. The other levels descended in worth, with the sensual level occupying the lowest position. Consequently, human sexuality was regarded as being low, earthy, and impure (Penner, 1993).

A Greco-Roman and thereby a Platonic dualistic understanding of human sexuality permeates Western philosophy to this day (Freeman, 2003). While an in-depth exploration of the Platonic/Christian versus the Christian/holist position is outside the scope of this paper, in the course of reviewing the literature, the reader is frequently exposed to either holist or dualistic philosophical views both within and without the secular and the Christian domain. A brief definition of holism is appropriate. Jan Smuts defined holism in the early 1920’s. His definition in the Oxford English dictionary, states that holism is the tendency in nature to form wholes that are greater than the sum of the parts (Oxford English Dictionary, 1986). Holism views systems in their entirety. Both philosophical domains are affected since both groups exist within
the Greco-Roman philosophical milieu. The very existence of the classification of
Christian vs. secular is dualistic. With an eye toward holistic integration, no distinction
has been made in the main body of this paper when quoting Christian vs. non-Christian
sources. However, for a discussion on the effect of the Christian philosophies on
human sexuality, see both the introduction to this paper and the discussion below.

This chapter attempts to review all the relevant disciplines involved in the
discussion and understanding of Hypoactive Sexual Desire Disorder. Where it is
possible, discussions that flow linearly are discussed in a linear manner. Just like the
process of sexual arousal, at times, there is no linear flow that can be discerned or
introduced. Many disparate disciplines must be considered in understanding HSDD.

The Modern Study of Human Sexuality

As a subject for modern scientific study, human sexuality is a relatively new
field, having started with Masters and Johnson and others in the 1970’s. In 1980, with
the introduction of the DSM-III, the subject of female desire disorder was introduced,
with the diagnostic label of Inhibited Sexual Desire (I.S.D.) a label that would later be
changed to Hypoactive Sexual Desire Disorder (O’Carroll, 1991, p. 608). Before 1980,
researchers studying this problem were concerned that the diagnosis would be
“pathologizing normal variations in sexual interest and [the] unnecessary stigmatizing
of the individual so labeled” (O’Carroll, 1991, p. 608). The concern continues to be
expressed in the literature today (Basson, 2005; Goldmeier, 2001; Loe, 2004).

Hypoactive sexual desire is one of several diagnoses among the group of
diagnoses known as Female Sexual Desire (Reporters, 2003). Using the Masters and
Johnson model as modified by Kaplan, four classes were codified by the American Foundation (Reporters, 2003).

1. Hypoactive desire and sexual aversion are two diagnoses related to desire.
2. The second class is difficulty in achieving or maintaining sexual arousal.
3. The third class is orgasm-related difficulties, which include a delay, absence or difficulty in achieving orgasm.
4. The fourth category is sexual pain and include dyspareunia, which is genital pain associated with sexual intercourse, and vaginismus, which is a persistent or recurrent involuntary spasm of the muscles surrounding the vaginal opening, which interferes with vaginal penetration. Sexual pain diagnoses also include genital pain not included or associated with sexual intercourse.

To further expand the diagnostic process, the following three subtypes must be added (Reporters, 2003):

1. Primary (lifelong and persistent) or secondary (acquired).
2. Generalized or situational (occurs only in given situations).
3. Psychological, organic, mixed or unknown.

As early as 1886, von Krafft-Ebing was doing theoretical work on sexual desire. But, some researchers note that relatively little research of consequence was done in human sexuality from the 1970's through 1989 (DeLamater, 2005; O'Carroll, 1991, p. 617). The diagnostic criteria from DSM-III failed to operationalize I.S.D in such a way as to allow for research (Basson, 2005). The lack of precise boundaries for the disorder
led to an inability to perform appropriate research. A proposal was made to add more operational criteria to the DSM III (O’Carroll, 1991, p. 617). These changes were not incorporated into the DSM IV, but the diagnostic label was changed to Hypoactive Sexual Desire Disorder (HSDD). Schreiner-Engel and Schiavi (1986) suggested operational refinements to the DSM-III’s definition of HSDD as follows: a) reported frequency of all sexual activity being twice per month or less over at least the previous six months, and b) a corresponding lack of subjective desire for engaging in any sexual behavior. Had such criteria been adopted by the framers of the DSM-IV, there would have been a better basis for clearly described subject groups (Leiblum & Rosen, 1988).

Since the DSM IV failed to operationalize HSDD in a manner useful to researchers, an ongoing effort exists to isolate the variables involved in HSDD. Masters and Johnson (1966) began the process of identifying variables such as the frequency of intercourse. Other variables that are believed to be important have also been isolated such as age, the importance of sex to a person and the presence of a sexual partner (DeLamater, 2005; Lie, 2005). Historically, the female sexual model has been viewed using the same linear model developed for males, based on the work of Masters and Johnson as revised by Kaplan (1969) to include desire (see Figure 1). Continuing to this day, DSM-IV definitions have focused on the absence of sexual fantasies and sexual desire previous to sexual arousal and activity (Basson, 2005). While the frequency of sexual desire is known to vary greatly among women without sexual complaints (Basson, 2005; Rosenau, 2002), desire has come to be seen as the starting place for sexual behavior (Hart, 1998; Kaplan, 1995).
In order to study sexual desire, it is necessary to define the term. Currently, there is no universally accepted definition (DeLamater et al, 2005). John Money (1986) stated that both phylogenetic and ontogenetic influences form our sexual desires and fantasies. In other words, our entire ancestry affects our sexual behavior, with the goal being both reproduction and an individual’s personal psychosexual development (Kaplan, 1995). Sexual behavior can include sexual desire or the two can exist independently of one another. Sexual behavior can even exist without desire (Basson, 2005). It is not possible to measure desire by measuring frequency of sexual behavior (Hart et al., 1998).

There are two main frameworks used to conceptualize desire. In the most common model, sexual desire is seen to be an innate motivational force. This view would see desire as an instinct, drive, need, urge, appetite, wish or want (DeLamater et
The second possible model would conceptualize desire as one factor in a larger relational model (DeLamater, 2005). This second model departs from the earlier linear model of Masters and Johnson (1966) as modified by Kaplan (1995) and instead follows a more circular form, in keeping with the work of Basson (2005); (see discussion below).

Among the various writers and researchers, opinions have varied. Freud (1933) operationalized sexual desire as biological; a built in force, driving behavior from the subconscious (Mannoni, 1971). Kaplan (1969, 1979) agreed with the biological sexual drive theory. These researchers saw desire, like hunger, as a drive that is beyond conscious control (DeLamater, 2005).

A second group of theorists hold that sexual desire is more psychological. This group would divide along the issue of internalized drive versus externalized drive. For those who see desire as externalized, the focus is seen as residing in the external object of desire (Verhulst & Heiman, 1979). For those who see desire as internalized, desire would be seen to come from within the individual (Everaerd, 1998; Schreiner-Engel, Schiavi, White, & Ghizzani, 1989).

Bancroft (1989) (Director of the Kinsey Institute until 2003) states, "Of the various aspects of the human sexual experience, sexual desire remains perhaps the most resistant to conceptual analysis" (p. 71). Bancroft (1989) puts forward a broader model for understanding the complexity of female sexual desire. In discussing the work of Schiavi & Schreiner-Engel (1986), Bancroft (1989) says:
We should therefore see sexual desire as an experiential and not a neurophysiological concept, and for operational purposes seek to identify and measure the three obvious dimensions of this experience—the cognitive, in terms of thoughts and internal imagery; the affective, in terms of mood or other emotional states, and the neurophysiological, in terms of central...arousability.

(p. 72)

However, while the definition of desire continues to evolve, this review represents the most current, widely accepted definitions available as of this study.

The Role of Fantasy in Sexual Desire

As stated by Zurbriggen and Yost (2004), most people engage in sexual fantasy at least occasionally (Hsu et al., 1994; Kinsey, Pomeroy & Martin, 1948; Kinsey, Pomeroy, Martin & Gebhart, 1953; Sue, 1979) and such fantasies are generally recognized as part of a healthy sexuality (Hariton & Singer, 1974). Kaplan (1995) sees desire and fantasy as so intertwined that there is no discerning between the two terms. She states:

I have used the terms “sexual desire” and “sexual fantasy” interchangeably. This was by design and not by accident. What I meant to convey by this was that sexual fantasies are, in fact, mental representations of a person’s most ardent sexual wishes and desires. Emphasis added by Kaplan (p. 46)

The absence of sexual fantasy is operationalized by the DSM-IV as the key to the lack of sexual desire in women (APA, 1994). Theorists currently believe that sexual thoughts, in the form of fantasies, are a motivational aspect of sexual experience and
occur as a precursor to sexual activity (DeLamater et al., 2005; Hart et al., 1998; Sherwin, 1988).

The Role of Sex in Marriage

Evaluating sexual activity is not a reliable method by which to study sexual desire; however, to evaluate HSDD, it would be useful to know what a baseline sexual activity level would be in married couples. A study by Donnelly (1993) reveals that empirical literature dealing with sexually inactive marriages is sparse. We do know that sexually inactive marriages are not uncommon in older demographics (Marsiglio & Donnelly, 1991). A study by Donnelly reviews the degree to which the lack of sex in a marriage is an indicator of a troubled marriage (Donnelly, 1993). Marriages without sexual activity are usually viewed as deviant or abnormal (Masters & Johnson, 1966, 1970). It is known that marital sexual activity is a significant factor in marital happiness and stability (Blumstien & Schwartz, 1983; Scasoni & Marsiglio, 1991). Additionally, it plays a part in extramarital sexual involvement (Edwards and Booth, 1976), the likelihood of divorce (Levinger, 1979), and a couple’s fertility (Jasso, 1985). It also may be an indicator of the overall quality of the marriage (Blumstien & Schwartz, 1983). The lack of sexual activity has important implications for the healthy, functioning marriage (Donnelly, 1993).

Another significant finding of the Donnelly (1993) study was that often there was little active conflict between the partners in a sexless marriage regarding the lack of sex. The hypothesis was drawn that this represents power issues, that the more powerful member has decreed that there will be no sex and the less powerful member of the
marital pair is no longer able to address the issue. It was further found that sex in marriage tends to decrease across time (Donnelly, 1993). This may be due to variables associated with available time for sex, children, jobs, commuting, housework, and financial pressures (Greenblat, 1983). Couples over sixty years old who associate sex with procreation may curtail sexual activity as aging occurs (Donnelly, 1993).

Donnelly’s (1993) study, using the National Survey of Families and Households data which was compiled by Bumpass and Sweet (1988), found that 16% of the sample was sexually inactive in the month prior to survey. This finding suggests that sexually inactive marriages are not as rare as previously thought (Donnelly, 1993). Significantly, among couples that perceived their marital happiness and shared activities to be unsatisfactory, there was a greater probability of sexual inactivity and marital separation (Donnelly, 1993).

The Hunt for a Female Viagra and the Boston Forum Debates

The invention of Viagra puts into sharp relief the issues associated with the conflict over biological and physiological determinants for HSDD (Loe, 2004). The emphasis on the sexual issues of Bill Clinton’s presidency and Bob Dole’s public advocacy for Viagra (starting in 1998) has fueled the search for a biological treatment for women’s low sexual desire. The industry is in a search for a drug for women that would be equivalent to the efficacy of Viagra and the other psychotropic medications that are used for male erectile dysfunction.

The rise of Viagra marks a shift on the part of the medical community into new areas (Conrad et al., 1992; Loe, 2004). One example of ways in which the medical
community is expanding out of its traditional role is that of “direct to the public” marketing of pharmaceuticals. Another example would be the funding of educational opportunities for professionals that have as their core goal the expansion of pharmacology as the primary means of treating sexual dysfunction (Loe, 2004). The Boston Forum is an example of industry movement away from male sexual dysfunction in the form of erectile dysfunction and into the area of female sexual dysfunction.

The Boston Forum met for the first time in 1998 and was open to the public for the first time in 1999 (Loe, 2004). The urologist and erectile dysfunction expert, Irwin Goldstein, organized the meeting. For the first three years of its existence, the Forum was hosted by the Boston University Medical Center. Pfizer, the pharmaceutical company that makes Viagra, underwrote many of the medical professionals at the conference. In 2002, Dr. Goldstein stepped down as the head of the conference, naming as his successor a Canadian, Dr. Rosemary Basson, whose theories will be discussed later in this chapter. The shift in the focus of the Boston Forum from male erectile dysfunction to female sexual dysfunction marks an expansion of the biologically based medicalization of female sexual disorders, including HSDD (Conrad et al., 1992; Loe, 2004, Tiefer, 2004).

The activities of the Boston Forum led to the creation of a reactionary group, the Working Group on Women’s Sexual Problems. A feminist psychologist named Leonore Tiefer leads this group. The Working Group is attempting to reverse the trend towards medicalization of female sexual disorders (Tiefer, 2002). Currently, comparatively little research funding is given to psychological studies while the bulk of the available
research funds are being used to underwrite ongoing biological studies into female desire disorders (Loe, 2004).

Biological Etiology

For the purpose of this paper, the complex factors involved in HSDD are broken down into biological and psychological categories. There are five biological factors (Reporters, 2003). For the subcategories involved for each factor, see Figure 2.

1. Vascular
2. Neurological
3. Hormonal
4. Urogynecological
5. Medications

Figure 2. Predisposing factors (Reporters, 2003).
To diagnostically assess a woman for any of the Female Sexual Dysfunctions, which include HSDD, a multidisciplinary focus must be used (Reporters, 2003). The specialists involved would include urologists, gynecologists, psychiatrists, psychologists, sexual therapists and endocrinologists.

It is important when reviewing research studies, to make a distinction between sexual desire and sexual behavior. If desire is evaluated based on frequency of behavior, critical factors such as the availability of a partner may be missed. In other words, if there is no partner, there may be no sexual activity, even though sexual desire is present (DeLamater et al., 2005). Not only is the availability of a sexual partner a factor, but also, as Basson (2003) points out, the quality of the interpersonal relationship with the partner plays a role in sexual desire.

Measurable sexual activity does decline starting in adolescence and continuing on into old age (Maurice, 1999). However, while sexual activity does decline with age, sexual desire does not decline along a similar statistical curve; instead, sexual desire remains high much longer within the individual life span (Maurice, 1999). Masters, Johnson and Kolodny (1994) suggest that unless affected by declining physical health, aging does not appear to be a factor in the decline of female sexual desire. In a dissenting opinion, several studies did find that sexual interest declines in aging women (Dinnerstein et al., 2001; Haillstrom & Samuelsson, 1990; Osborne, Hawton & Gath, 1988). These conflicting results may be due to variation in the measures of sexual desire that were used or a failure to take into account other influences (DeLamater et al., 2005). (For more on other influences, see the discussion on co-morbid diagnoses.)
The effect of hormones on sexual desire is the pivotal argument in the biological versus psychological debate currently raging over HSDD (Tiefer, 2002). Correlational evidence does suggest an association between frequency of intercourse and women's mid-cycle levels of testosterone (Basson, 2005; Morris et al., 1987; Nappi et al., 2003). Schriener-Engel et al. (1989) said, "The present findings did not provide evidence that reproductive hormones are important determinants of individual differences in the sexual desire of these eugonadal women" (p. 221). In other words, in women who would otherwise be sexually active, if hormonal levels are within normal limits, pathological processes involving endocrinology should not be a causative factor in female HSDD.

To expand the discussion, female sexual desire is influenced by both estrogens and androgens (American College of Obstetricians and Gynecologists, 2000). It was John Money (1961) who said, "Estrogen makes females attractive to males while testosterone makes them responsive to males" (p. 389). Since this study's emphasis is on HSDD, the discussion will be confined to the role of testosterone in female sexual desire. Sex steroids are important determining factors in female sexual desire (Davis, 2000). One proof of the link between testosterone and female desire is the documented decline in sexual desire following an ovariectomy (oophorectomy) (Nathorst-Boos & Von Schoultz, 1992).

Within this discussion of female reproductive hormones, it is necessary to revisit the topic of sexual desire across the aging process. The process of aging does change both the production and function of sex hormones (Morley, 2003). Pre-menopausal
women generate ninety-five percent of their estrogen in the ovaries (Sherwin, 1992). The production of estrogen and testosterone ends at menopause and the absence of these hormones leads to the atrophy of the vagina (Sherwin, 1992). It must be noted that unlike the vagina, the clitoris is not subject to the effects of hormonally based treatments, since the clitoris is not subject to menopausal atrophy (Angier, 1999). Thus, clitoral stimulation may continue to play a part in female sexual desire while vaginal atrophy may affect the actual sexual practice (Angier, 1999). In normal menopause, the production of testosterone by the female does not decrease (Davis, 2000). It is only in cases of surgically induced menopause that testosterone production is artificially curtailed (Judd, 1994). Despite this fact, in postmenopausal women who are given estrogen therapy with testosterone therapy, the clinical effect of the two hormones administered together, far exceed the results in women give estrogen alone (Burger et al., 1984; Burger et al., 1987). It is not currently known if these benefits are due to physiological or pharmacological factors (Davis, 2000).

Koehler (2005) criticizes the Davis (2000) study for failure to screen the women in the study for the quality of their relationship with their sex partners. She further speculates that variations in efficacy observed in the testosterone studies may be due to a failure to provide testosterone therapy soon enough in the menopausal process, believing that the receptor sites for testosterone may atrophy and affect outcomes (see Figure 3). Some studies in psychopharmacology suggest that the future inroads in treatment will come from improved understanding of the synaptic process (Halmi et al., 1983; Moss and Smart, 2001).
Some studies, using bivariate and multivariate analyses found the most important predictors of sexual function in midlife women to be age, the importance of sex to the woman, and the presence of a sexual partner (DeLamater, 2005; Lie, 2005). In this study, attitudes regarding sex are found to be more important determinants of sexual desire than biomedical factors (DeLamater, 2005). The DeLamater study is unique in that it addresses an underserved area in the study of human sexuality: sex in an elderly population. As the study notes, the number of elderly persons in the U.S.
doubled from nearly 17 million in 1960 to 35 million in 2000 and is projected to reach 53.7 million by 2020 (U.S. Bureau of the Census, 2002).

Insights from the Study of Phylogenesis

Phylogenesis is the history of the evolution of a genetically related group of organisms. The field is relevant to a study of HSDD since in the treatment of HSDD, it is important to know if low sexual desire may in fact be part of a larger question.

Kaplan (1995) asked if low desire in a long-term monogamous relationship is due to genetic programming. She notes that some social scientists have suggested that men are not monogamous by nature, but have been forced into monogamy by church, economic factors and female sexual politics.

John Money (1986) suggests that humans are serially monogamous. In serial monogamy, desire can be expected to remain high for three or four years and then decline unless the couple has a new baby, which will renew the process for another three to four mating seasons. Kaplan (1995) notes that support for the serial monogamy theory would include the decrease in sexual desire that occurs in long-term monogamous relationships, the undeniable universal erotic appeal of sexual novelty, and the high prevalence of extramarital sexual affairs that occur in most societies. If this theoretical orientation is valid, then the outlook for the treatment of HSDD is grim.

To paraphrase G.K Chesterson’s writing about Christianity [in What’s Wrong with the World (1910)], it might be said that the ideal of monogamy hasn’t so much been tried and found wanting; rather, it has been found difficult and often left untried (Barash & Lipton, 2001). Some writers suggest that polygamy is the natural state for
mankind (Barash & Lipton, 2001). When data was being collected for Kinsey’s famous sex studies, the largest cause of nonparticipation was the question regarding extramarital sex (Kinsey, et al. 1948; 1953). Barash (2001) points out that happy, fulfilled monogamy is possible; however, people are biologically and psychologically capable of having sex with more than one person. This viewpoint must be considered as the theory behind the treatment of HSDD continues to evolve.

Kaplan (1995) believes that animal studies are not useful in the human monogamy debate. She notes that of the two reproductive strategies, monogamy and polygamy are both successful at continuing the species biologically. She further observes that the rekindling of passion for a mate when another potential mate threatens the relationship is evidence that long-term pair bonding is possible.

Many phylogenetical studies have discussed the origin of the female climax or orgasm (LaQueur, 1990; Shlain, 2003). Female orgasm is relevant to this discussion since it may be linked to desire issues (LaQueur, 1990). Levin (2003) looked for a beneficial effect that human females acquire from coitus other than pregnancy. The Levine study finds that the female genital tract and pelvic musculature do derive benefit from the exercise of coitus when female orgasm occurs. Therefore, coitus that includes orgasm on the part of the female does enhance general pelvic health.

Insights from the Study of Ontogenesis

Ontogenesis refers to the sequence of events involved in the development of an individual from birth to death. Looking at sex ontologically brings to light the issues of what the underlying Freudian theories of psychosexual development suggest i.e. that
there is a critical developmental period in which an individual’s sexual desires are formed (Freud, 1964; Kaplan, 1995). Ontogenesis has created a theoretical foundation allowing the exploration of the method by which an infant’s early experiences with significant others shaped him or her psychologically and how these experiences later become translated into sexual desire (Cooper 1991; Kernberg, 1974, 1977; Klien, 1975; Rolfhe & Galenson, 1981).

The application of ontogenesis occurs in the field of developmental biology. One of the main focuses of ongoing research is the searching to understand the control and timing of developmental pathways in the development of sexual arousal across the individual lifespan (ISCID, 2005). In addition to the developmental pathways of organisms, developmental biologists study chromosomal disease processes. In the area of human sexuality, this becomes important in studying mutations to the XX & XY chromosomes.

Insights from Gender Based Studies

It was Freud (1933) who noted, “When you meet a human being, the first distinction you make is male or female?” and you are accustomed to making the distinction with unhesitating certainty (as quoted in Laqueur, 1990 p. 70). Freud was a medical doctor and wrote in a time when it was considered proper that only medical doctors studied human sexuality. He is also known for his famous statement, “anatomy is destiny.” The current view of gender has evolved from a time in history when women are seen as an immature form of the male sex (Laqueur, 1990). Currently, sexuality is viewed as a matter of genetics, and gender is viewed as socially constructed
(Laqueur, 1990). Today, there are studies that compare men and women from a sexual arousal standpoint.

In a study conducted by Baumeister et al. (2001), men and women were compared using two films. One film contained sexual content and one did not. Post exposure to stimuli, the men and women were surveyed to determine the likelihood of sexual contact after they watched the films. There did seem to be a gender-based difference in sexual motivation. In the literature review of previous studies conducted as part of the Baumeister (2001) study, it was concluded that across multiple studies and using multiple measures, men as compared to women have more frequent and more intense sexual desire, fantasize more frequently about sex, masturbate more frequently and report fewer problems concerning low sexual desire. In summary, men seem to be more strongly motivated sexually compared to women (Baumeister, Catanese & Vohs, 2001).

It is significant in discussing the Baumeister (2001) study to add a comment on the Christian perspective. Despite research to the contrary, many Christian writers persist in promulgating the myth that women are not visually aroused (Eggerichs, 2004). Penner (1993) is the exception, not only advancing the psychosexual model first discovered by Freud, but noting that the vagina of an infant lubricates shortly after birth, in a process that continues throughout the lifespan. As the following discussions of vaginal photoplismography and vaginal plismography suggest, female desire can be triggered due to visual stimulation.
In another study roughly duplicating the Baumeister (2001) study, Both et al. (2004), used erotic and non-erotic films to create a laboratory-induced state of sexual arousal. In comparing the male and female groups, there was no significant difference in arousal post viewing the erotic stimulus, as measured by both laboratory findings and self-report. Using a vaginal photoplethysmograph to assess vaginal pulse amplitude, female arousal comparable to male arousal was noted. In a second finding, the Both (2004) study tested for sexual activity following the experiment. The mean post-experimental sexual activity score for the control group was .40, while the group exposed to erotic films was .95. (p<0.05). The conclusion drawn is that exposure to a sexual stimulus moderates the internal desire state, which enhances responses to subsequent sexual stimuli. This finding would lend weight to the application of Basson’s (2000) circular arousal/desire theory (See p. 48).

Psychological Etiology

Reviewing psychological factors for HSDD, Hawton (1986) stated that there are no psychological treatments of proven efficacy for loss of sexual desire in the female and of the psychosexual dysfunctions, HSDD fares poorest in long-term follow-up studies. The interventions that form the basis for most sex therapy programs, originally suggested by the linear model of Masters and Johnson (1970), were not designed to deal specifically with low sexual desire but rather with dysfunctions that occur after the sexual arousal cycle has started (p. 160). While many of these behavioral exercises may enhance arousal and orgasm, they do not address the goal of increasing sexual desire or motivation.
Many cases of low sexual desire are not only quite complex (Basson, 2005; Reporters, 2003), but are quite diverse in apparent etiology and maintaining factors. The majority of desire-phase dysfunctions are rooted in profound sexual and marital conflicts, as opposed to problems concerning arousal and/or orgasm (LoPiccolo, 1980; 1988). The sexual response cycle is most vulnerable to disruption before it starts i.e. at the point of desire (Kaplan, 1979; Kaplan, 1985; Zimmer, 1987). Zilbergeld and Ellison (1980) point out that each case of low sexual desire must be examined on its own terms and treatment must be tailored to the specific needs of the individual case. Other researchers add the same warning that sexual therapy this complex must be tailored to the individual needs of the couple (Goldstein et al., 2004; LoPiccolo & Friedman, 1988, p. 130).

Studies have also noted that the availability of a sexual partner plays a role in female sexual desire (Cain et al., 2001; DeLamater et al., 2005). As was already noted, female sexual desire decreases across time in long-term relationships. However, if the primary partner is lost, a woman’s sexual desire returns to a high level when the woman enters a new sexual relationship (Basson, 2005).

Insights from the Study of Co-morbid Diagnoses

Co-morbidity or dual diagnosis is the presence of more than one pathological process at the same time. It is important to note that the diagnosis of HSDD frequently does not occur in isolation. Co-morbidity and maintaining factors must be considered. An examination of co-morbidity among other sexual disorders is also called for (Beck, 1995, p. 919). It is important to make a distinction regarding the existence of sexual
desire apart from sexual activity in order to rule out the various diagnoses so as to treat the actual problem (DeLamater, 2005). As part of the review of the literature, the various possible dual diagnoses have been explored.

Research has isolated the variable of dyspareunia (pain with intercourse) and HSDD (Bancroft, 1989). Dyspareunia shares something with HSDD in that it may be caused by a continuum of factors. In fact, there may be a causal link between pain with intercourse and the development of HSDD (DeLamater, 2005; Wouda et al., 1998, p. 142). The study of this disorder may shed light on other arousal-based disorders. In the cases of dyspareunia where organic causes can be ruled out, the diagnosis is potentially a psychological phenomenon.

In dyspareunia, the women’s vaginal lubrication is not decreasing; rather, psychologically, their arousal is diminishing due to painful intercourse. This may also be secondary to aging, since in older women, painful intercourse may be a consequence of vaginal atrophy (Maurice, 1999). Lubrication issues may be subject to other factors as well (Levin, 2003).

It can be concluded from the study of dyspareunia that arousal does take place as a result of visual stimulation, despite what has been previously hypothesized (Basson, 2005; Wouda et al., 1998). The woman may not perceive physiological arousal; yet, arousal can be verified via vaginal plethysmography, which measures vaginal lubrication (Wouda et al., 1998) or photoplethysmography, which measures vaginal vasocongestion in order to measure physiological arousal (Basson, 2005). Other studies have also concluded that there may be a perceptual disconnection between arousal and
the perception thereof (Read, 1995, p. 178). This may point to an as-yet-unexplored link between HSDD and female sexual arousal disorder (DSM-IV-TR 302.72).

In looking at yet another co-morbid diagnosis, the growing volume of research pointing to anorgasmia must be addressed. For the purpose of this section, anorgasmia is defined as the loss of orgasm, not to be confused with preorgasmia (women who have never had an orgasm.) That is, a distinction must be made between women who have never learned to have an orgasm (global) and women who can no longer have an orgasm (situational).

One of the most frequent causes of anorgasmia, hypoactive sexual desire and possibly other sexual desire problems (Reporters, 2003) is the use of selective serotonin reuptake inhibitors. Control of nerve cell excitability is crucial for normal brain function (Moss et al., 2001). While many prescription and over-the-counter drugs can lead to sexual problems for women, the Selective Serotonin Reuptake Inhibitors are known for their ability to cause a wide range of sexual disorders including anorgasmia. Once a woman loses her ability to reach a climax during intercourse or other sexual activity, a noted decline may begin in sexual desire.

Depression has a strong association with reduced sexual desire (Basson, 2005). In a study reviewing 79 women for medication effects, 50% reported decreased sex drive, 50% reported more difficulty obtaining vaginal lubrication, and 50% reported far less sexual arousal during sex. Only 50% of these women reported sexual activity in the previous month (Kennedy et al., 1999). When specifically asked about the sexual side
effects in antidepressant use, 70% of the women surveyed reported adverse effects (Montejo, 2002).

Insights from Social History

Romantic love has been with us since ancient times (Angier, 1999). However, that love has been socially acceptable as long as it was presented in a Platonic, courtly, but not sexual sense. Currently, modern American society promotes an attitude towards women and their sexuality that is counterproductive to a healthy libido (Goldstein et al., 2004).

While male sexual pleasure has been grudgingly allowed by society at large, the idea of female sexual pleasure is a concept that is reemerging. In ancient history, women were seen as sexually motivated (Angier, 1999). As noted in the introduction, during the Middle Ages and on into the Victorian era, woman came to be seen as non-sexual (Shlain, 2003). It was only recently in history that women were again expected to experience sexual pleasure. Indeed for centuries, female orgasm was a taboo subject (Shlain, 2003).

Perhaps the best argument for the fact that women are intended to enjoy sexual pleasure is the clitoris. Many believe that the clitoris is the only organ in the human anatomy of either males or females that is intended exclusively for pleasure (Angier, 1999; Shlain, 2003; Traina, 2000). The clitoris is a bundle of eight thousand nerve fibers, which is a higher concentration of nerve fibers than is found anywhere else in the body (Angier, 1999). The clitoris has two times the number of nerve fibers found in the male penis (Angier, 1999). Present at birth, sexual organs prove that humans are created as
sexual beings. (Penner, 1993). A structure so clearly designed for no other purpose than pleasure must prove that women are intended to experience pleasure (Angier, 1999, Shlain, 2003).

It was Freud who first suggested a link between society’s controls and sexuality (Marcuse, 1955). He, like Augustine, taught that sex was “disorderly”. Freud felt that without the constraints of society on sexuality, sexuality could cause a regression into barbarism (Marcuse, 1955). His reasoning was that blindly following the leading of one’s instincts would generally not favor the interests of society (Freud, 1930). Further, Freud (1930) felt that civilization was maintained through guilt feelings. Still, Foucault (1978) offers the opinion that Freud, juxtaposed against the Church’s cultural influence, deserves credit for moving sexuality to a better place in society.

Freud further contributed to the intellectual conversation in exploring gender differences with the term ‘penis envy’ (Angier, 1999). Freud taught that sexuality creates a distillation or shorthand in which larger psychological issues can be seen (Glenmullen, 1993). Glenmullen agreed that human sexuality should be studied as an insight or into the soul (Glenmullen, 1993).

Consequently, one factor in HSDD may be socializing pressures, which still do not universally support the idea that sex should be pleasurable for women (Basson, 2005; Traina, 2000; Vance, 1989). Several older studies suggest that female sexual desire is lower in the earlier years of a marriage and that female sexual desire increases over time (Ehrman, 1967; Kinsey, Pomeroy, & Martin, 1948, Kinsey, Pomeroy, Martin and Gebhard, 1953). In analyzing these results, Donnelly (1993) suggests that young women
are socialized to repress their sexual desire when younger. She further suggests that by middle age, women may have shed their earlier socialization (Donnelly, 1993).

If, due to early childhood experiences, a woman does not expect to enjoy sexual pleasure, considerable therapeutic work may be needed to give permission for pleasure (Traina, 2000). Kaplan (1995) holds that there is a critical period of development between the age at which a child is able to understand what is happening to him or her and the age at which sexual fantasies and feelings have formed. It is during this time that the desires and fantasies are in an "amorphous or malleable state" (Kaplan, 1995). These experiences are likely to be due to sensory-sensory integration, which states that two simultaneously occurring perceived events become functionally and neurophysiologically associated or learned (Birch & Bitterman, 1949; Kaplan, 1995).

Many women have not experienced pleasure related to their sexuality and in fact, have experienced exactly the opposite (Gilligan, 1982). From the pain experienced in separation from the father and eventual love interests (Gilligan, 1982) to the pain of ovulation, menstruation, intercourse, pregnancy, labor and delivery, breastfeeding and weaning, women often do not associate their sexuality with pleasure (Traina, 2000). Some form of negative reinforcement via pain may be a factor in the etiology of HSDD.

Kaplan (1995) notes that the earliest human experiences are primary influences shaping sexual desire. She points out that:

The continuous and repeated mutually pleasurable, intimate, physical, and emotional contact that small children normally enjoy with their mothers, fathers and other family members-which include sleeping together, carrying, holding,
cuddling, stroking, suckling, feeding, sniffing, licking, kissing, rocking, looking at, caressing, touching, holding, soothing, patting, joking, giggling, teasing, tickling, belly kissing, blowing, bathing, drying, dressing, grooming, playing with, rubbing, cooing, talking to, etc, etc., are all normal activities... with babies...[which] are inadvertently mildly erotically arousing to infants and young children, and sensuously pleasurable to parents...that these experiences form the psychologic origins of normal sexual fantasies and desires. (Italics by Kaplan, p. 41)

It is important to repeat Kaplan's emphasis that these experiences are to be differentiated from abuse and incestuous behavior. She states, in fact, that these experiences are part of the normal psychosexual development of a child.

Attachment Theory

Building on the psychosexual developmental theories of Freud, the idea of a developmentally created love map has emerged. It was John Money (1986) who first suggested the mental template of every individual's sexuoerotic fantasies and erotic practice. Money, building on John Bowlby's (1979) attachment theory, created the concept of the love map. Kaplan (1995) who deserves credit for already having added the desire phase to the Masters and Johnson linear model builds on Money's model. Kaplan (1995) suggests, “Early fantasies may come to occupy the person’s entire ‘love-map’ or ‘sexual program’, to the exclusion of any other subsequent input or deletion, so that this becomes and remains the person’s exclusive sexual desire” (p. 40). This is an example of how theorists can work together and build on one another’s work. Money (1997) continues to develop the idea of a love map, specifying that humans acquire a
love map between the ages of five and eight. The love map is a subset of early childhood experiences that relate to a woman’s expectations for a male lover. These expectations are based on interactions with the father and other significant figures. The concept of a love map may allow clinicians to better study pre-existing expectations in a woman’s sexual matrix (Money, 1997).

The Theory of Rosemary Basson

A new model achieving prominence that deserves mention is that of Dr. Rosemary Basson (2000, 2001, 2005) on sexual desire and arousal. Her circular model presents an alternative to the linear model of Masters and Johnson. According to Basson’s (2000) model, women in long-term, monogamous relationships often do not experience the sexual desire, (conscious sexual urges, thinking, fantasizing) arousal, plateau, orgasm and resolution phases of the traditional linear sexual response cycle of Masters and Johnson (1966) as modified by Kaplan (1979). Instead, the Basson model suggests that female arousal is a cyclical process that can be entered in several different places (see Figure 4).

Figure 4. Sex response cycle.
The model suggests that a woman’s entrance into a sexual encounter may activate her sexual arousal. That is, since it is possible for a woman to be unaware of her sexual arousal, the application of the model suggests that sexual activity might precede her perception of sexual desire. Only after a period of sexual activity does she experience desire, which then leads to further arousal (Owens, 2003). Alternately, entering the cycle in a more traditional manner, she may experience desire, leading to sexual activity, which leads to sexual arousal.

Previously, the definitions of the DSM-IV-TR and the movement to change them were discussed. Basson (2005) is part of a movement that is currently attempting to change the definitions in the next revision of the DSM-IV-TR. If successful, new definitions will be based on her new model and will mark a departure from the Masters and Johnson model. This redefinition would radically change the underlying paradigm by which HSDD is both diagnosed and treated.

The Relationship between Treatment and Further Research

The treatment of HSDD is multifaceted and must be individualized (Reporters, 2003). The information from the literature review of the historical development of the current diagnosis of HSDD was used to formulate a new diagnosis and treatment matrix. The diagnostic and treatment matrix is based on the best scientific data to date and may be useful in providing order to the complex task of isolating the variables involved in treating HSDD. The matrix must be considered a work in progress and is to be used as a foundation for further study. The matrix is in no way meant to add impetus to “cookbook therapy” but rather to allow the clinician to have both a practical
starting place and a framework for thinking through the complex factors involved in
treating this disorder. It is hoped that both the continuing process of research and the
ongoing trial and error of treatment outcome analysis will further develop the flowchart
and that this process will provide ongoing insights for further research (see Appendix
A).

The Christian Perspectives

Present-day Christian writers on human sexuality bring a unique perspective to the subject. As discussed previously, the Christian Church has not historically held a favorable opinion towards human sexuality (Bloom, 2004). However, during the modern era, there has been a shift in the content of Christian writings as contrasted with early Church and medieval philosophies (Foucault, 1978). Writers such as Doug Rosenau (2002), Archibald Hart (1998) and Dr. and Mrs. Clifford Penner (1993) bring a more sex positive approach to the world of Christian writing.

To return to the discussion of the existence of Platonic dualism in the church, an example would be the inclusion of an entire chapter in Rosenau’s (2002) book, *A Celebration of Sex* with the title, “Minimizing the Mess.” Apparently, Rosenau’s book is written largely in response to female concerns that he has heard expressed during the course of his clinical work. The chapter discusses at length the issue of sex being dirty, messy and animalistic. It does not appear that Rosenau is attempting to take a Platonic position, but in writing this practical book for couples, he sees a need to address the Platonic issue with couples. It can be inferred from the context of the case studies he includes that the messiness of sex is a big issue with Christian women.
Some of the Christian literature available today has not benefited from the many new insights available in the field of human sexuality. In a new book, distributed by Focus on the Family, Dr. Emerson Eggerichs (2004) includes a chapter called, “Sexuality- Appreciate His Desire for Sexual Intimacy.” Eggerichs fails to recognize the existence of female sexual desire and fails to identify HSDD.

Eggerich’s writing includes many examples of Platonic thinking that are especially evident in the chapter on a man’s sexual needs (note again the exclusion of any mention or recognition of a woman’s sexual needs.) Eggerichs (2004) notes: “Just as he should minister to your spirit to have access to your body, so, too, you should minister to his body to have access to his spirit” (p. 250). Note the inference that the woman has a higher “spiritual” need for intimacy created via communication while the man has a lower “physical” need for intimacy created via sexual interaction.

Penner and Penner’s (1993) book, *Restoring the Pleasure* succeeds at educating couples. Of particular value is the developmental model for sexuality, starting with physiological sexual behavior that starts in the infant. While their frank language may alarm some Christians, the book is quite useful.

In Christian literature, there is evidence of an emerging integrationist critique. In a recent book, *Real Sex: the Naked Truth about Chastity*, Laurene Winner (2005) says:

The second myth that pervades Christian conversations about sex and I should admit this myth really ticks me off is the notion that while men are randy brutes, raring to leap into bed at the first opportunity, women don’t really like sex, and aren’t all that interested in having sex (premarital or marital). (p. 90)
She further notes that Christian literature and conversation implies that “men don’t have emotions and women don’t have libidos” (p. 91). The emphasis in Winner’s (2005) book is on promoting Christian chastity from a holistic position.

The backlash critique may be coming from within American culture, not specifically from Christian circles. In a book strikingly similar to Winner’s, Wendy Shalit (1999), a young single Jewish woman offers an apology for female modesty. She discusses reform and orthodox Jewish modesty laws. These laws advocate no touching before marriage. Curiously, the comment is made that the mystery of modesty increases erotic potential thereby creating more sexual desire.

In reviewing Penner and Penner (1993) for the general reader, there is much to recommend. Included are several insights from many in the field including Kaplan, Masters and Johnson and others. However, it is surprising that the older label of Inhibited Sexual Desire is used instead of Hypoactive Sexual Desire. They also mix aspects of sexual desire and arousal in their chapter on desire issues, despite following that chapter with a chapter on arousal. An example would be the following quote: “The solution to loss of sexual desire due to lack of responses is to pursue the sexual retraining process provided in Chapter 12, incorporating specific suggestions from Chapter 17 on becoming orgasmic” (p. 218). While anorgasmia may play a primary role in HSDD, research shows that using treatments based on the Masters and Johnson linear model are not effective in the treatment of HSDD.
CHAPTER III

METHODOLOGY

Population and Sample

Due to research that suggested a productive group of subjects would be available (Nusbaum et al., 2000), a medical obstetrical and gynecological practice was selected as a data-gathering site. Located in Moultrie, Georgia and operated by David Adcock M.D., the practice is advertised as Christian and draws a large number of Christian women from the area. Because sexuality is often perceived to be a sensitive subject, patients were asked to volunteer for an anonymous survey. Consequently, no master record was kept that would match the respondent to the doctor’s patient files. Randomization occurred via the process of the patients appearing in the office for regularly scheduled appointments. Surveys were collected until enough patients were found who met the study criteria.

Instruments

Both the sexual health or lack thereof and theological position of the sample were assessed using a multidimensional assessment approach. The following instruments were used in this study:

1. *The Demographic Form* (see Appendix D) was used to gather certain demographic and sociological data. An integral element of this form was a self-scoring of the subject’s perception of her own theological position on a seven-point scale, running from liberal to conservative.
This variable was used in conjunction with the CROS score to calculate the participants' Total Religious Orientation Score (TRO).

2. The Sexual Self-Assessment Questionnaire (SSAQ) (Berman & Berman, 2001, p.219) (see Appendix C) was used to discriminate between psychological, physiological or combined etiology. The eight-item questionnaire helped to determine whether the pathology, if any, was Female Sexual Arousal Disorder (FSAD), Female Orgasmic Disorder (FOD), a type of sexual pain disorder or Hypoactive Sexual Desire Disorder (HSDD). This instrument was used in order to both filter and a funnel, selecting HSDD individuals from those who have no sexual dysfunction and also from those whose dysfunction is not one targeted by this study.

3. The Christian Religious Orientation Scale (CROS) (see Appendix E) was used to access whether respondents are conservative, moderate or liberal in their current religious orientation (Bensko et al., 1995, p. 631).

Although denomination has historically been used as an indicator of Christian orthodoxy, research has shown that there are inconsistencies between values and positions and between past and present (Bensko et al., 1995, p. 629). The term “conservative” is often understood to imply a continuity of values between past and present (Minogue, 1967). Bensko’s research has proven this is not the case. This scale was developed using the method consistent with Sugar et al. (1992). The
CROS consists of nineteen statements describing positions endorsed by most Christian orthodoxies in the United States (e.g. creationism, sexual abstinence before marriage, male ministry, and the authority and infallibility of the Bible) (Reed et al., 1990). Since the test incorporates a seven-point Likert scale, the output from the instrument is a number ranking between one and seven that indicates religious orthodoxy. In the original study that developed the CROS, the CROS score was found to be significantly correlated with the religious self rating item, $r (220) = .65, p<.01$. Accordingly, the mean CROS score and the self-rating item are averaged to create a Total Religious Orientation (TRO) score (Bensko, 1995, p. 637). The TRO can range from one to seven. Higher scores indicate a liberal orientation and lower scores indicate a more conservative orientation. Consistent with the method used by Sugar, et al. (1992), participants were categorized as conservative if their TRO score was between 1.0 and 3.95, moderate if their score was between 3.96 and 4.95, and liberal if their score was between 4.96 and 7.0.

4. The Female Sexual Function Index (FSFI) (see Appendix F) is a self-report measure of sexual functioning. It has been repeatedly validated using a clinically validated sample of women with various sexual disorders (Rosen et al, 2000). The instrument is commonly used to assess Female Sexual Dysfunction, including HSDD (Goldstien, 2000; Reporters, 2003; Rosen et al., 2000). The instrument has been recently
validated to discriminate between Female Orgasmic Disorder (FOD) and Hypoactive Sexual Desire Disorder (HSDD) (Meston, 2003). Using a nineteen-item instrument, the FSFI uses a six-domain structure including desire, subjective arousal, lubrication, orgasm, satisfaction and pain (Rosen et al., 2000). Test-retest reliability coefficients are high for each of the individual domains (r=0.79 to 0.86) and a high degree of internal consistency has been observed (Cronbach’s alpha values of 0.82 and higher) (Rosen et al., 2000). Good construct validity has been demonstrated by highly significant mean difference scores between FSAD and control groups for each of the domains (p<0.001) (Rosen et al., 2000). Divergent validity with a scale of marital satisfaction has been observed (Rosen, 2000). These results support the reliability, psychometric and clinical validity of the FSFI in assessing the various dimensions of female sexual functioning (Rosen et al., 2000).

Pilot Study

No formal pilot study was conducted; however, a number of female volunteers were utilized to evaluate the CROS. There were five female volunteers, ranging in age from thirty-eight to sixty-two. All had college degrees and in the upper level socioeconomicly. The score was tabulated and compared to their self-rated perceptions of whether they were more liberal or conservative. While no formal statistical analyses were made, a strong positive correlation was found between the score on the CROS and the individuals’ perception of their theological positions.
In addition, the volunteers reviewed all the instruments. Following, they were interviewed in order to determine their attitudes toward honestly answering the items being surveyed. The recurring theme noted was that participants were concerned about who would have access to their answers. This response confirmed that the research would best be conducted anonymously. The volunteers were also interviewed regarding their interpretation of the items on the instruments in order to assess if they understood what was actually being asked. The volunteers also participated in time trials to be sure the time required to take the surveys was under one hour.

Procedures

After obtaining permission from the Liberty University Institutional Review Board and with the support of Dr. Adcock, director of the Christian medical practice, married patients were asked if they would like to participate in a survey while waiting to see the doctor. The testing time was carefully calculated to fit within the average waiting time to see the doctor: one hour. If patients agreed to participate in the study, they were given a packet and asked to fill out the contents. The participants were instructed to open the packet and fill out the surveys in the order in which they appeared in the packet. They first read and signed an informed consent agreement (see Appendix C). The participants then read and completed the remainder of the packet. The assessment instruments were presented in the following order:

1. Demographic form (see Appendix D)
2. Christian Religious Orientation Scale (CROS) (see Appendix E)
3. Sexual Assessment Questionnaire (SAQ) (see Appendix C)
4. Female Sexual Function Index (FSFI) (see Appendix F)

To avoid influencing the participants, the inventories all had abbreviated titles. The inventories were given in the above order to assess the Christian theological position of the participants before assessing their sexual functioning. At the end of the testing period, the surveys were returned to the nurse on duty in the office. The surveys were then mailed to the investigator in North Carolina. No incentive, monetary or otherwise, was provided to the participants.

There were several criteria for inclusion in the study. Participants had to be married, self-identified as having been a Christian for at least three years prior to the study and at least eighteen years of age. This group was chosen in order to allow the effects under investigation to have had sufficient time to manifest.

Once the surveys were returned to the investigator, they were scored using standardized scoring directions and templates. After the scoring was complete, the data was entered into the Statistical Package for the Social Sciences (SPSS) Version Twelve for statistical analysis.

Given that this study involved human participants, their safety was guarded at all times. The probability of any ill effect with this study was very low i.e. there was only minimal risk involved in the completion of the surveys. The Human Research Committee at Liberty University also reviewed this study before implementation. It was remotely possible that when attention was given to the level of sexual dissatisfaction that was being investigated, that there would be a resultant
destabilization of the marriage involved. Referral therapists were available to deal with any marital conflicts that might have occurred.

Design

This study used a correlational research design to investigate the relationship between Christian religious orientation (conservative, moderate, or liberal) and the occurrence of Hypoactive Sexual desire Disorder (HSDD) among women. The primary predictor variable was Christian religious orientation, as determined by the participants' Total Religious Orientation score (TRO), and the criterion variable was the presence of HSDD, as determined by the participants' responses to the first two items on the FSFI.

This study was designed to determine if the participants' Christian religious orientations along a seven-point Likert scale between liberal and conservative is related to the type of sexual dysfunction currently defined as HSDD. The participants' TRO scores ranged from one to seven, with lower scores indicating a conservative orientation and higher scores indicating a liberal orientation. The participants' responses on the first two items of the FSFI, used to identify the presence of HSDD, ranged from one to five, with a response of one or two on either item indicating the presence of HSDD.

A predictive research design was also employed to determine the best predictive variables for each of the criterion variables selected for this study. The independent or predictor variables consisted of the religious orientation and demographic variables. The religious orientation variables included the participants' (a) CROS scores, (b) Religious Orientation Self-rating scores and (c) the total Religious Orientation scores.
The scores of all the religious orientation variables ranged from one to seven. The demographic variables included: (a) age, (b) number of years of church membership, (c) number of years in current denomination, (d) number of years married, (e) number of times married, (f) cultural group, (g) income level, (h) level of education and (i) pregnancy status (yes, no and maybe) (see Appendix D).

The dependent or criterion variables consisted of a number of sexuality variables. The sexuality variables included: (a) the presence (1) or absence (0) of HSDD, (b) the level of sexual desire/interest (a five-point Likert scale ranging from 1-almost never or never to 5-almost always or always, (c) the frequency of sexual desire/interest (a five-point Likert scale ranging from 1-very low or none at all to 5-very high) and (d) sexual energy (level of sexual desire/interest x frequency of sexual desire/interest; scores ranged from 1 to 25).

Statistical Analysis

For descriptive purposes, the demographic variables were examined and the most appropriate and representative descriptive statistic (mean, median, standard deviation, frequency counts, and percentages) was selected for each of the variables. Descriptive statistics were also used to present the results of the participants’ scores on each of the religious orientation variables and the sexuality variables. Alpha level of this study was set at $p = .05$. However, due to the exploratory nature of this study, findings significant at the $p = .10$ level were noted to suggest possible trends for future research. Statistical analyses were performed using the Statistical Package for the Social Sciences Version Twelve (SPSS, Inc, Chicago) (see Appendix A).
The primary hypothesis, that there will be a positive relationship between religious orientation and the occurrence of HSDD among Christian women, was tested using a point-biserial correlation. Bivariate statistical comparisons were performed using point-biserial correlations to compare the participants’ Total Religious Orientation (TRO) scores and each of the sexuality variables (presence or absence of HSDD, level of sexual desire/interest, frequency of sexual desire/interest, and sexual energy).

Bivariate statistical comparisons were also performed using point-biserial correlations to compare the sexuality variables with the other religious orientation variables (CROS scores, theological opinion variables, and Religious Orientation Self-rating scores) and with selected demographic variables. The sample size is small for regression. Regression models were run to explore the data in more depth. Four backward elimination multiple regression models were constructed. The four dependent measures were: (a) level of sexual desire/interest (see Table 5), (b) frequency of sexual desire/interest (see Table 6), (c) sexual energy level (see Table 7), and presence of HSDD (see Table 8). A total of twenty-one candidate-independent variables were used, which included both demographic information and responses to individual CROS items. The backward elimination multiple regressions were performed to create economical models for predicting each of the sexuality variables.

Limitations and Delimitations

While HSDD affects men as well as women, the variables involved in evaluating male desire dysfunction are not the same (Apt et al., 1993). Accordingly, this study was limited to HSDD in the female population.
The baseline of HSDD is 33% (DSM-IV-TR, 2000, p. 538). The sample from which this statistic was drawn does not control for the religiosity of the participants.

The determination of an adequate sample size for the multiple regression models was calculated using a formula recommended by Tabachnick and Fidell (2001, p. 117). They recommend that the sample size be calculated based on the following formula:

\[
\text{Sample Size} = 104 + m
\]

where \( m \) equals the number of independent variables. Given that formula, the anticipated sample size for this study needs to be between 115 and 120 respondents.

Given the above, the sample is underpowered by about 30-40%. However, since this is an exploratory study in a comparatively new line of research, using the regression models is intended to shed additional light on the topic and possibly suggest some fruitful avenues for future research. The goal was worth the risk of over interpreting the data.
CHAPTER IV

RESULTS

This chapter is organized into three main sections: descriptive statistics, the main research hypotheses, and the supplemental research questions. The first section presents descriptive statistics including a profile and comparison of the demographic characteristics of the sample of women from the Georgia medical practice used in the study. The second section presents the results of the main research hypotheses; i.e. religious orientation will be significantly related to the occurrence of HSDD among Christian women. Finally, the third section presents results of the statistical analysis for the supplemental research questions.

Descriptive Statistics

The subjects of this study were drawn from a Christian obstetrical/gynecological medical practice located in southern Georgia. The study looked at a number of demographic variables including: age, number of years of membership in the church they are presently attending, number of years affiliated with the denomination to which they currently belong, number of years married, number of times married, cultural group, income group, educational level and current pregnancy status (see Appendix D for Personal Information sheet).

The purpose of this study was to explore the possibility that the current Christian experiences convey negative attitudes about female sexuality. Clinicians are seeing a surge in the diagnosis of HSDD and research exploring the various causative factors is essential. The seventy-one participants of this study were married, Caucasian women.
The Total Religious Orientation (TRO) scores of the participants were used to determine their religious orientation. According to the TRO scores all seventy-one women met the criterion for a conservative orientation. None of the participants met the criterion for a moderate or liberal orientation. Some of the small demographic subgroups within the sample were extremely heterogeneous but small in sample size (fewer than ten respondents). Given the small sample sizes, a decision was made to only include the theologically conservative, Caucasian, married women.

Table 1 displays the demographics of the sample. When respondents were asked to rate their religious point of view from very conservative to liberal, the median self-rating was between conservative and moderate (45.1%). The age of the respondents ranged from eighteen to sixty-nine, with the median age being thirty-five years. Most (83.1%), self-identified as church members. Their total years in the Church ranged from 0 to 50 years ($M = 19.24, SD = 15.33$). When asked about their religious denomination, half (50.7%), reported being in the Baptist denomination, 16.9% stated they had no church affiliation, and 12.7% declined to state. The number of years married ranged from six months to forty-two years ($M = 10.12$ years, $SD = 9.68$). Sixty-nine percent of respondents had been married once, 24.0% had been married twice, and 7.0% had been married three times. Twenty-seven percent had a college or advanced degree, 59.2% had at least some college or higher and 40.8% had a high school education or less. Most respondents (87.3%) considered themselves in either the lower- or middle-income class (see Table 1).
Table 2 displays descriptive statistics for the sexuality variables and marks a transition where the sexuality variables began to be examined. A diagnosis of HSDD was found in 59.2% of the women. Of the total number of women, 35.2% were pregnant at the time of the study. Their frequency of sexual desire or interest was rated (1 = almost never or never, to 5 = almost always or always). The median response was “a few times.” The intensity of sexual desire or interest was also rated (1 = very low or not at all, to 5 = very high). The median response was “moderate.” A sexual energy variable was calculated by multiplying their score on the five-point frequency of sexual interest rating, with the five-point intensity of sexual desire rating. Over half of the respondents (59.1%) scored between one and six points on this scale, and 14.1% had between thirteen and twenty-five points (M = 7.88, SD = 5.59). The theological question, “Is masturbation a sin?” was rated using a seven-point Likert scale (1 = strongly agree to 7 = strongly disagree). The most frequent responses being either “neutral” (26.8%), or “disagree” (39.4%). When responding to the theological statement, “Sexual intercourse before marriage is not a sin,” 56.3% responded that they “strongly disagree”, and 24.4% responded either “somewhat disagree” or “disagree” with that statement (see Table 2).

Main Research Hypotheses

The main research hypothesis that there will be a positive relationship between religious orientation and the occurrence of HSDD among Christian women was evaluated using bivariate statistical comparisons of the main religious orientation variables with the sexuality variables. Table 4 displays the point-biserial correlations for the sexuality variables and the religious orientation variables. The Religious
Orientation Self-rating scores, CROS scores, and the TRO were not significantly related to the presence of HSDD, frequency of sexual desire/interest, intensity of sexual desire/interest, or sexual energy variables (See Table 4).

**Supplemental Research Questions**

In addition to the main hypothesis, supplemental research questions were addressed to provide clarification to the overall results of the study. The first question was whether or not there were observable differences between the occurrence of HSDD among the participants in this study and the baseline occurrence of HSDD found in the general population, according to the DSM-IV. A diagnosis of HSDD was found in 59.2% of the seventy-one conservative Christian women who participated in this study. The rate of HSDD among conservative Christian women was noticeably higher than the occurrence of HSDD among the general female population (33.3%; DSM-IV-TR, 2000, p. 538).

The second supplemental question was whether or not there was a relationship between the sexuality variables and the participants' demographic variables. The third supplemental research question was whether or not there was a relationship between the sexuality variables and the theological opinion variables (participants' responses to individual CROS items). Table 3 displays the point-biserial correlations for selected demographics and theological opinion variables with sexuality variables. The four sexuality variables were:

1. desire frequency
2. desire intensity
3. sexual energy

4. the presence of an HSDD diagnosis

Desire frequency was positively correlated with the liberal theological opinion related to school prayer ($r = .22$). In addition, desire frequency was related to a conservative view about women having authority over men ($r = .33$), and a conservative view for taking a Sabbath rest ($r = .22$). Desire intensity was negatively correlated with the number of years in the church ($r = -.20$), and the number of years married ($r = -.27$). In addition, desire intensity was related to a liberal theological view on premarital sex ($r = .31$), but conservative views regarding a women’s authority over men ($r = -.33$), and Sabbath rest ($r = -.20$). The sexual energy variable was related to a liberal view on school prayer ($r = .21$), but theologically conservative opinions related to women’s authority over men ($r = -.37$), and taking a Sabbath rest ($r = -.24$). The presence of an HSDD diagnosis was not related to any of the six demographic factors, but was related to a liberal religious viewpoint concerning the issue of women’s authority over men ($r_{pb} = .32$) (see Table 3).

The fourth research question asked which combination of independent variables serves as the best predictors for level of sexual desire/interest of conservative Christian women. Table 5 displays the multiple-regression model predicting level of sexual desire based on selected variables. Initially, twenty-seven independent variables were used as candidates. Based on a backward elimination regression model technique, eight independent variables remained in the final model. This model was statistically significant ($p = .001$) accounting for 43.3% of the variance in the level of sexual desire.
Inspection of the semi-partial correlation coefficients in Table 5 revealed that the level of sexual desire was higher for younger women ($sr = -.294$), women who had been married a greater number of times ($sr = .259$), higher levels of income ($sr = .266$), having a liberal theological view on masturbation ($sr = .181$), having a conservative view on Jesus miraculously changing water into real wine ($sr = -.186$), a liberal theological view on the submission of wives ($sr = .193$), a liberal view on premarital sex ($sr = .245$), and a conservative view regarding the authority of women over men ($sr = -.446$) (see Table 5).

The fifth research question asked which combination of independent variables serve as the best predictors for frequency of sexual desire/interest of conservative Christian women. Table 6 displays the multiple-regression model predicting the frequency of sexual desire, based on selected variables. As before, a backward elimination model began with twenty-seven candidate-independent variables. The resulting model was statistically significant ($p = .001$), accounting for 30.5% of the variance in the dependent variable. In the seven-variable final model, frequency of sexual desire was related to a greater number of times married ($sr = .198$), a liberal theological view on school prayer ($sr = .214$), a liberal view regarding masturbation ($sr = .196$), a liberal view about submission of wives ($sr = .262$), a conservative view of Jesus Christ born of a virgin ($sr = -.283$), a conservative view concerning the authority of women over men ($sr = -.287$), and a conservative view related to taking a Sabbath rest ($sr = -.222$) (see table 6).

The sixth question asked which combinations of independent variables serve as the best predictors for the sexual energy of conservative Christian women. Table 7
displays the multiple-regression model predicting sexual energy level, based on selected variables. Again, the backward elimination regression technique was performed. The final model was statistically significant \( (p = .001) \), accounting for 24.7% of the variance in the model. The four-model solution found sexual energy to be significantly higher for women who had a liberal theological view of masturbation \( (sr = .216) \), a theologically conservative view on Jesus Christ born of a virgin \( (sr = -.184) \), a theologically liberal view related to premarital sex \( (sr = .239) \), and a theologically conservative view related to the authority of women over men \( (sr = -.416) \) (see Table 7).

Finally, the last research question asked which independent variables serve as the best predictors for the occurrence of HSDD among conservative Christian women. Table 8 displays the results of the backward elimination logistic regression model predicting the presence of HSDD. Using twenty-seven candidate variables, the final model included one independent variable. The rating for Item 15, “Women cannot morally assume a role of authority over men” reflected a more liberal theological view for those women with HSDD \( (p = .01, 95\% CI = 1.08 - 1.83) \). The rate of HSDD in this sample was 59.2%, which provides the baseline classification rate. The final model correctly classified 67.8% of the respondents. More specifically, this model correctly classified thirty-five of forty-two respondents (83.3%) with HSDD and thirteen of twenty-nine respondents (44.8%) without HSDD.
CHAPTER V

DISCUSSION

The present study was an attempt to evaluate the relationship between Christian values and the sexual desire of married female Caucasian individuals. Previous attempts have looked at Christianity from a denominational perspective. This study attempts to look at Christianity along a continuum starting with conservative, through moderate and ending with a liberal theological orientation. This study intentionally interrogated Christian women outside of the organizational church’s physical facility and was designed to look for a religious effect that had previously occurred but was presently negatively affecting the sex lives of Christian women.

For the purpose of this study, the diagnosis of HSDD was used as defined by the Diagnostic and Statistical Manual 4th edition, specifically “a deficiency or absence of sexual fantasies and desire for sexual activity” (DSM, 2000, p. 539). The disturbance [of sexual desire] can be expected to cause marked distress or interpersonal difficulty (DSM, 2000, p. 541). Due to a lack of normative age- or gender-related data on frequency or degree of sexual desire, the diagnosis must rely on clinical judgment, based on the individual’s characteristics, the interpersonal determinants, the life context and the cultural setting (DSM, 2000, p. 539). The individual usually does not initiate sexual activity or may only engage in it reluctantly when it is initiated by the partner (DSM, 2000, p. 539).

For the purpose of this study, the diagnosis of HSDD is operationalized by the use of the Female Sexual Function Inventory (FSFI) (see Appendix F). The first item on
the FSFI rates the frequency of sexual desire in the previous four weeks. An answer of "almost never" or "never" or an answer of "a few times i.e. less than half the time" was considered diagnostic. The second item on the FSFI rates the level or degree of sexual interest in the previous four weeks. An answer of "low" or "very low i.e. none at all" was considered diagnostic.

Overview of Findings

It was hypothesized that women who had experienced an exposure to conservative Christian ethics via participation in organized church activities would show significantly higher levels of HSDD. More specifically, the hypothesis expected to observe a skew toward the conservative end of the theological spectrum, with the effect tapering off as the survey participants moved down the spectrum toward a liberal perspective. However, this hypothesis was not supported by the data.

A careful examination of concomitant factors is warranted in order to better comprehend and clarify the results of this study. Among the factors that should be considered are the difficulties experienced in sampling conservative Christian women. It is possible that a significant group of women at the extreme conservative end of the scale were untested by the survey method used. This is evidenced by the large number of surveys that were returned either not completed at all or so partially filled out as to be unusable. Of the 600 surveys originally printed, only 103 were returned in a usable condition. It may be that the women who declined to participate may have done so due to the conservative effect that this study was attempting to research.
The possibility exists that the first research hypothesis may be found to be valid by a future study. This is supported by the findings of the second research hypothesis. This hypothesis collapsed the conservative to liberal scale upon itself and looked at the degree of HSDD in the women sampled versus the expected 33% noted in the DSM IV. A statistical analysis showed that the sample had an occurrence of HSDD of 59.2 while the DSM only predicts a 33% level. This statistical comparison confirms the statistically significant difference of degree in the occurrence of the sample vs. the DSM statistic.

As previously noted, the DSM finding of an expected 33% of HSDD does not control for religiosity. The inadvertent inclusion of Christian women in the DSM sample may have had a positive effect on the DSM finding. There was no attempt made to control for religiosity in the DSM sample. Specifically, if the religiosity of the sample used for the DSM statistic was controlled, the DSM statistic might have been lower, as it is reasonable to assume that there are a large number of Christians in the DSM sample. If so, significance between the two variables may have been neutralized.

Another factor to consider is the sensitivity of gathering data on the subject of human sexuality. One area that was emphasized in the data collection was the confidentiality of the results. Despite reassurance, the overarching concern of the subjects was data confidentiality. It is reasonable to conclude that concerns regarding confidentiality may have affected the results.

Another factor to consider is the educational level of the participants. Despite the mean educational level of 10.12, the most frequently omitted item on the CROS was the question regarding euthanasia (see Appendix E). While it is possible the item was
left blank due to squeamishness on the part of the participants, a more reasonable conclusion is that the answer was left blank due to a lack of familiarity with the word itself.

Delimitations of the Study

This study represents a first attempt to measure the effect of Christian values on HSDD. The study was conducted in a rural area of southern Georgia. The subjects in this study were recruited volunteers rather than being randomly selected; this restricts the populations to which the results of this study can be generalized. Further, the data collected only represents the occurrence of HSDD among conservative Christian women instead of sampling moderates and liberals as originally intended. Finally, data gathered using self-reporting is not always reliable.

Recommendations

For future studies assessing female sexuality, the basic design of this study could be replicated with the addition of using an Internet-based collection method. This would perhaps instill confidence regarding the confidentiality of the data collected. This confidence might make participants more likely to take part in the study. With a larger randomized sample, results for conservative women could be collected and analyzed. These results would have a higher degree of external reliability and therefore generalizability.

Future studies might also benefit from looking for a link between gender and HSDD in conservative Christian women. When reverse regression was used in this
study, the view that conservative Christian women held toward the role of men was found to be a factor in the occurrence of HSDD.

The Relationship between Treatment and Further Research

The treatment of HSDD is complex and must be individualized (Reporters, 2003). To this end, a diagnosis and treatment matrix could be developed to take into account the best scientific data to date. Such a matrix might be useful in giving order to the complex task of isolating the variables involved in treating HSDD. This matrix must be considered a work in progress and used as a foundation for further study; it is in no way meant to add impetus to “cookbook therapy.” Instead, it should allow the clinician to have both a practical starting place and a framework for thinking through the complex factors involved in treating HSDD. It is likely that both the process of research and the trial and error of treatment attempts will develop this flowchart further and that this process will provide new insights for further research (see Appendix A).

Conclusion

This study has been an attempt to examine the effect of Christian theological positions on Hypoactive Sexual Desire Disorder. Although there were no significant differences in the occurrences of HSDD based on theological position, it cannot be concluded that there is not a significant effect due to the other factors that may have influenced the outcome of this study.

This study can, however, serve as a model for future research assessing the effect that theological position has on the occurrence of HSDD. The experimental design might be greatly improved by use of the Internet to assure confidentiality for survey
participants. In a future study, collecting data from what may be an unexplored area of Christian conservatism may prove that significance was masked in this study.

Since Story (1979) found that exposure to human sexuality courses resulted in significant positive changes in students’ attitudes, it is reasonable to conclude that exposure to Christian ethics in a church setting would affect the sex lives of Christian women. Continued research into the sex lives of Christian women based on a theological perspective could also provide a valuable opportunity to identify the factors involved in the effect. If such an effect is found, further research into the mode of transmission is needed. The information gleaned from this research could be used to continue to refine a treatment matrix for HSDD (see Appendix A).

Since the incidence of HSDD is rising (Kaplan, 1995; Spector & Carey, 1990), the continued study of HSDD in the Christian population is timely and necessary. A commitment to continued research in the area of female Christian sexuality could provide crucial information necessary in the treatment of HSDD which would enable the refinement of the treatment matrix. The results of continued investigation in this area could provide both researchers and clinicians with a better understanding of how specific treatments might be developed for HSDD.
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76


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APPENDIX A: TREATMENT MATRIX FOR HYPOACTIVE SEXUAL DESIRE DISORDER

Symptom or Deficit Affecting Sexual Function

Yes

Sexual Dysfunction

Treat other Axis I DX and Reevaluate

Yes

Other Axis I DX?
(Exclude Sexual Dysfunctions)

No

Biological

Possible SSRI induced orgasmic disorder

Yes

SSRI Use?

No
Treat drug abuse and reevaluate for HSDD

Yes

Drug Abuse?

No

Treat Dyspareunia and reevaluate for HSDD
(Probable need for couples therapy post treatment)

Yes

History of Dyspareunia?

No

Treat male partner and reevaluate for HSDD

Yes

(Male) partners sexual dysfunction?

No

Treat Medically (See Medical Addendum)

Yes

Biological screen normal?

Go to Developmental Psychology
Medical Addendum of Biological Factors

Prosexual Neurotransmitters - (Production of Decreased with androgen deficiency)

- Dopamine
- Oxytocin - Affected by pregnancy (causes lactation)
- Noradrenaline
- Serotonin – via 5HT1A receptors

Negative Neurotransmitters

- Serotonin via 5HT2 and 5HT3 receptors
- Prolactin
- Gamma Amino Butyric Acid – (GABA) used/abused by professional weigh lifters

Neurotransmitters Effected by Androgen deficiency

- Depression
- Anti-depressants
- Anti-psychotics
- Low thyroid
- Hyperprolactinemic State – affects limbic areas of brain
Treat Attachment Issues and re-evaluate for HSDD

Treat sexual abuse/trauma and re-evaluate for HSDD (explore for co-morbid dyspareunia)

Refer for Religious training and counseling and re-evaluate for HSDD

Explore conflicts and re-evaluate for HSDD

Explore therapeutic conflicts and re-evaluate for HSDD

Attachment Issues?

History of Sexual Abuse/Trauma?

Subsequent to Religious Conversion?

Subsequent to Marriage Or Divorce?

Subsequent to Depression, Grief or Fatigue/Stress?
Explore issues and re-evaluate for HSDD

Subsequent to Pregnancy or Childbirth?

No

Subsequent to Aging?

Yes

Subsequent to Abortion?

No

Subsequent to Infertility Treatment?

Yes

Treat for post-abortion trauma and re-evaluate for HSDD

No

Treat for couples’ issues and re-evaluate for HSDD
Explore therapeutic conflicts and re-evaluate for HSDD

Yes

Subsequent to Sterilization?

No

Psychological (acquired with no co-morbid factors)...........................................

Treat as primary and re-evaluate for HSDD

Yes

Anorgasmic?

No

Explore issues and re-evaluate for HSDD

Yes

Generalized?

No

Explore issues and re-evaluate for HSDD

Yes

Situational?

No

Re-evaluate theory and methodology.
APPENDIX B: SEXUAL SELF ASSESSMENT QUESTIONNAIRE (SSAQ)

1. During sexual stimulation, foreplay, and/or intercourse, I experience the following sexual complaint(s): (Circle all that apply)
   a. vaginal dryness  
   b. lack of genital sensation (tingling/warmth with sexual arousal)  
   c. difficulty achieving orgasm  
   d. loss of intensity of orgasm (orgasms feel muffled)  
   e. genital pain either with or without sexual contact  
   f. lack of sexual interest

2. I feel that my sexual complaint(s) have affected my desire for sex. In other words, if sex wasn’t painful, frustration, or no fun, I would be more interested. (Circle one answer)

   Yes  No  Don’t know

3. I notice that I have the same sexual difficulties with my partner as I have alone during self-stimulation. (Circle one answer)

   Yes  No  Don’t know  Don’t self-stimulate

4. There was a time when I was satisfied with my sexual response and/or interest. (Circle one answer)

   Yes  No  Don’t know

5. I am presently being treated with medication and/or psychotherapy for:

   a. depression  
   b. anxiety disorder  
   c. any psychiatric illness
6. I feel that:
   a. My partner knows what to do to sexually satisfy me.
      Yes  No
   b. I am comfortable giving my partner direction about how to sexually stimulate me.
      Yes  No
   c. I feel connected to and emotionally intimate with my partner.
      Yes  No
   d. My general/sexual communication with my partner is adequate.
      Yes  No
   e. I don’t have a partner at present.
      Yes  No

7. I have a history of sexual abuse or trauma.
   Yes  No  Don’t know
   If yes,
   a. I never told anyone.  Yes  No
   b. I never pressed charges.  Yes  No
   c. I did not receive counseling.  Yes  No
   d. I feel this history affects my present sexual life.  Yes  No

8. The following conditions apply to me:
   a. I have had a hysterectomy or other pelvis surgery.  Yes  No
   b. I am postmenopausal.  Yes  No
   c. I have diabetes.  Yes  No
   d. I have cardiovascular disease.  Yes  No
   e. I smoke.  Yes  No
   f. I am taking SSRI’s (such as Zoloft or Prozac).  Yes  No
   g. I am taking birth control pills.  Yes  No
   h. I have had one or more prolonged labor and deliveries
      (that is, needed ventouse / suction).  Yes  No
   i. I have a history of straddle injury (fell on bicycle, balance beam, etc.).  Yes  No
   j. I have had a spinal chord injury.  Yes  No
1. I have had genital circumcision.  
   m. I have multiple sclerosis or other neurologic disorder
   Yes  No
   Yes  No
APPENDIX C: INFORMED CONSENT AGREEMENT

Please read this consent agreement carefully before you decide to participate in the study. You will receive a copy of this agreement.

Purpose of the research study: The purpose of the study is to study the effect of certain Christian theological positions on sexual desire.

What will you do in the study: You will answer several tests.

Time required: You will spend about 50 minutes to answer the tests.

Benefits: There is no guarantee of direct benefits to you in participating in this study. The study may help us understand more about Christianity and sexual desire. You may benefit by the information you will learn about yourself as you fill out the surveys.

Confidentiality: The information that you give in this study will be handled confidentially. Your packet will not be identified in any way. When you finish filling out your forms and return them to the secretary, they will be mailed without any identifying marks, to the researcher in North Carolina. Dr Adcock will not be informed of your individual answers, now or in the future. Once your data has been entered into a computer for analysis, the original forms that you have filled out will be destroyed.

Voluntary Participation: Your participation in the study is completely voluntary.

Right to withdraw from the study: You have the right to stop filling out the forms at any point within the testing period. Once you turn in the forms they will be sent to the researcher. At that point, it will no longer be possible for you to ask for your forms back.
How to withdraw from the study: If you wish to withdraw from the study during the testing period, simply stop filling out the forms and throw them away. There is no penalty for withdrawing.

Payment: You will receive no payment for participating in the study.

Who to contact if you have questions about the study: Investigator in North Carolina-Ralph Fox II, 318 Causeway Drive #4, Wrightsville Beach, NC 28480

Who to contact about your rights in the study: Dr. Randall Davy, Chairman, Institutional Review Board, Liberty University, Lynchburg, VA 24502. Telephone (804) 582-2440

Agreement: The study described above has been explained to me. I voluntarily consent to participate in this activity. I have had an opportunity to ask questions. I understand that future questions I may have about the research or about my rights as a subject will be answered by the investigator listed above. I hereby release and agree to indemnify and hold harmless Liberty University, its agents, employees, successors and assigns, from any liability for any claims that may arise as a result of this research study and/or my participation therein, and in consideration of the benefits derived by me from this research study. I also hereby agree not to sue or otherwise assert any claim against Liberty University, its agent or employees for any cause of action arising out of the research study referenced above.

Signature of Participant: _______________________________ Date: ________
APPENDIX D: PERSONAL INFORMATION

City, State, Zip Code ________________________________

Age (Circle One Group)  20-29  30-39  40-49  50-59  60+

Number of years a member of your church? _____

Number of years in your current denomination? i.e. Baptist, Methodist, Catholic, etc.

_____  

As a Christian, would you consider yourself to be liberal moderate or conservative? Please circle where you think your position on the scale below:

1 = Very conservative
2 = Conservative
3 = Between conservative and moderate
4 = Moderate
5 = Between moderate and liberal
6 = Liberal
7 = Very liberal

Number of years married? ____________

How many times have you been married? ____________
Cultural group (Circle one) Caucasian  African  Hispanic  Asian  Other

Income Group (Circle one) Low  Middle  Upper

Highest Level of Education achieved: (Circle One) Some high school  High School Graduate  Some College  College Graduate  Post College Degree i.e. Masters  Doctoral work i.e. MD, Ph.D., etc

Are you pregnant? (Circle one) Yes  No  Maybe
APPENDIX E: C.R.O.S.

For the questions below, please enter the number of your response on the line beside the question.


1. Organized group prayer should not be allowed in public schools. ____
2. God literally made Adam from the dust of the earth. ____
3. Women should have the choice to have an abortion. ____
4. Masturbation is a sin. ____
5. Jesus miraculously changed real water into real wine. ____
6. Euthanasia is wrong because the time of death is decided by God alone. ____
7. Wives should submit to their husbands. ____
8. The theory that God created humans should be taught in science classes as an alternative to evolutionary theory. ____
9. Homosexuality is not a sin. ____
10. Jesus Christ was born of a virgin. ____
11. Humans are a recent product of natural evolution. ____
12. Humans are not literally made in the image of God. ____
13. Sexual intercourse before marriage is not a sin. ____
14. God sometimes answers individual prayers by intervening directly in the affairs of the world.  

15. Women cannot morally assume a role of authority over men.  

16. The professional ministry or priesthood should be open to women.  

17. The bible in every detail is the literal word of God.  

18. Genetic cloning does not interfere with Gods work.  

19. Sunday should be a day for *only* rest and worship.
INSTRUCTIONS: These questions ask about your sexual feelings and responses during the past 4 weeks. Please answer the following questions as honestly and clearly as possible. Your responses will be kept completely confidential. In answering these questions the following definitions apply:

Sexual activity can include caressing, foreplay, masturbation and vaginal intercourse.

Sexual intercourse is defined as penile penetration (entry) of the vagina.

Sexual stimulation includes situations like foreplay with a partner, self-stimulation (masturbation), or sexual fantasy.

CHECK ONLY ONE BOX PER QUESTION.

Sexual desire or interest is a feeling that includes wanting to have a sexual experience, feeling receptive to a partner’s sexual initiation, and thinking or fantasizing about having sex.

1. Over the past 4 weeks, how often did you feel sexual desire or interest?

   Almost always or always

   Most times (more than half the time)

   Sometimes (about half the time)

   A few times (less than half the time)

   Almost never or never
2. Over the past 4 weeks, how would you rate your level (degree) of sexual desire or interest?
Very high
High
Moderate
Low
Very low or none at all

Sexual arousal is a feeling that includes both physical and mental aspects of sexual excitement. It may include feelings of warmth or tingling in the genitals, lubrication (wetness), or muscle contractions.

3. Over the past 4 weeks, how often did you feel sexually aroused ("turned on") during sexual activity or intercourse?
No sexual activity
Almost always or always
Most times (more than half the time)
Sometimes (about half the time)
A few times (less than half the time)
Almost never or never
4. Over the past 4 weeks, how would you rate your level of sexual arousal ("turn on") during sexual activity or intercourse?

No sexual activity
Very high
High
Moderate
Low
Very low or none at all

5. Over the past 4 weeks, how confident were you about becoming sexually aroused during sexual activity or intercourse?

No sexual activity
Very high confidence
High confidence
Moderate confidence
Low confidence
Very low or no confidence
6. Over the past 4 weeks, how often have you been satisfied with your arousal (excitement) during sexual activity or intercourse?

No sexual activity
Almost always or always
Most times (more than half the time)
Sometimes (about half the time)
A few times (less than half the time)
Almost never or never

7. Over the past 4 weeks, how often did you become lubricated ("wet") during sexual activity or intercourse?

No sexual activity
Almost always or always
Most times (more than half the time)
Sometimes (about half the time)
A few times (less than half the time)
Almost never or never

8. Over the past 4 weeks, how difficult was it to become lubricated ("wet") during sexual activity or intercourse?

No sexual activity
Extremely difficult or impossible
9. Over the past 4 weeks, how often did you maintain your lubrication ("wetness") until completion of sexual activity or intercourse?

No sexual activity
Almost always or always
Most times (more than half the time)
Sometimes (about half the time)
A few times (less than half the time)
Almost never or never

10. Over the past 4 weeks, how difficult was it to maintain your lubrication ("wetness") until completion of sexual activity or intercourse?

No sexual activity
Extremely difficult or impossible
Very difficult
Difficult
Slightly difficult
Not difficult
11. Over the past 4 weeks, when you had sexual stimulation or intercourse, how often did you reach orgasm (climax)?
No sexual activity
Almost always or always
Most times (more than half the time)
Sometimes (about half the time)
A few times (less than half the time)
Almost never or never

12. Over the past 4 weeks, when you had sexual stimulation or intercourse, how difficult was it for you to reach orgasm (climax)?
No sexual activity
Extremely difficult or impossible
Very difficult
Difficult
Slightly difficult
Not difficult

13. Over the past 4 weeks, how satisfied were you with your ability to reach orgasm (climax) during sexual activity or intercourse?
No sexual activity
Very satisfied
Moderately satisfied
About equally satisfied and dissatisfied
Moderately dissatisfied
Very dissatisfied

14. Over the past 4 weeks, how **satisfied** have you been with the amount of emotional closeness during sexual activity between you and your partner?

No sexual activity
Very satisfied
Moderately satisfied
About equally satisfied and dissatisfied
Moderately dissatisfied
Very dissatisfied

15. Over the past 4 weeks, how **satisfied** have you been with your sexual relationship with your partner?

Very satisfied
Moderately satisfied
About equally satisfied and dissatisfied
Moderately dissatisfied
Very dissatisfied
16. Over the past 4 weeks, how **satisfied** have you been with your overall sexual life?
- Very satisfied
- Moderately satisfied
- About equally satisfied and dissatisfied
- Moderately dissatisfied
- Very dissatisfied

17. Over the past 4 weeks, how **often** did you experience discomfort or pain during vaginal penetration?
- Did not attempt intercourse
- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

18. Over the past 4 weeks, how **often** did you experience discomfort or pain following vaginal penetration?
- Did not attempt intercourse
- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
A few times (less than half the time)
Almost never or never

19. Over the past 4 weeks, how would you rate your level (degree) of discomfort or pain during or following vaginal penetration?
Did not attempt intercourse
Very high
High
Moderate
Low
Very low or none at all

Thank you for completing this questionnaire
Table 1

*Demographics of Sample (N= 71)*

<p>| | | |</p>
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<tr>
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<tbody>
<tr>
<td></td>
<td><strong>n</strong></td>
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<tr>
<td>Religious Self-Rating</td>
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<td>Conservative</td>
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<tr>
<td>Sixties</td>
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Table 1 *Continued*

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<td>Under 10 years</td>
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<td>10–19 years</td>
<td>17</td>
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<td>20–34 years</td>
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<tr>
<td>Catholic</td>
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<td>Nazarene</td>
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<tr>
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<td>1.4</td>
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\(^a\) Years: \(M = 19.24, SD = 15.33\)

Number of Years Married \(^b\)

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<th>Number of Years Married</th>
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<tr>
<td>Fewer than 3 years</td>
<td>20</td>
<td>28.2</td>
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<td>3–5 years</td>
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<tr>
<td>6–10 years</td>
<td>9</td>
<td>12.7</td>
</tr>
<tr>
<td>11–19 years</td>
<td>14</td>
<td>19.7</td>
</tr>
<tr>
<td>20–42 years</td>
<td>13</td>
<td>18.3</td>
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Number of Marriages

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<th>Number of Marriages</th>
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<th>%</th>
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<td>One</td>
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<td>69.0</td>
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<td>Two</td>
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<td>24.0</td>
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<tr>
<td>Three</td>
<td>5</td>
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<td><strong>Education</strong></td>
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<tr>
<td>Some high school</td>
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<td>19.7</td>
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<tr>
<td>High school graduate</td>
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<td>21.1</td>
</tr>
<tr>
<td>Some college</td>
<td>23</td>
<td>32.4</td>
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<tr>
<td>College graduate</td>
<td>14</td>
<td>19.7</td>
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<tr>
<td>Post college degree</td>
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b Years: $M = 10.12, SD = 9.68$

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<tr>
<th><strong>Income Group</strong></th>
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<tr>
<td>Lower class</td>
<td>11</td>
<td>15.5</td>
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<tr>
<td>Middle class</td>
<td>51</td>
<td>71.8</td>
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<tr>
<td>Upper class</td>
<td>9</td>
<td>12.7</td>
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Table 2

Descriptive Statistics for Sexuality Variables (N= 71)

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<thead>
<tr>
<th></th>
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<tr>
<td>Presence of HSDD</td>
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<tr>
<td>No</td>
<td>29</td>
<td>40.8</td>
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<tr>
<td>Yes</td>
<td>42</td>
<td>59.2</td>
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<tr>
<td>Pregnancy Status</td>
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<tr>
<td>Not pregnant</td>
<td>40</td>
<td>56.3</td>
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<tr>
<td>Maybe/unknown</td>
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<td>8.5</td>
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<td>Pregnant</td>
<td>25</td>
<td>35.2</td>
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<tr>
<td>Frequency of Sexual Desire/Interest</td>
<td></td>
<td></td>
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<tr>
<td>Almost never or never</td>
<td>6</td>
<td>8.5</td>
</tr>
<tr>
<td>A few times</td>
<td>34</td>
<td>47.9</td>
</tr>
<tr>
<td>Sometimes, about half of the time</td>
<td>13</td>
<td>18.3</td>
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<tr>
<td>Most of the time</td>
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<td>21.1</td>
</tr>
<tr>
<td>Almost always or always</td>
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<td>4.2</td>
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HSDD = Hypoactive sexual desire disorder
Table 2 Continued

<table>
<thead>
<tr>
<th>Intensity of Sexual Desire/Interest</th>
<th>n</th>
<th>%</th>
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<tbody>
<tr>
<td>Very low or none at all</td>
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<td>15.5</td>
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<td>Low</td>
<td>16</td>
<td>22.5</td>
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<td>Moderate</td>
<td>33</td>
<td>46.5</td>
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<td>High</td>
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<td>Very high</td>
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<table>
<thead>
<tr>
<th>Sexual Energy a</th>
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<tr>
<td>1–2 points</td>
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<td>16.9</td>
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<tr>
<td>3–6 points</td>
<td>30</td>
<td>32.2</td>
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<tr>
<td>7–12 points</td>
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<tr>
<td>13–25 points</td>
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*a Energy: $M = 7.88$, $SD = 5.59$

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<tr>
<th>Sinfulness of Masturbation Opinion</th>
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<tr>
<td>Strongly agree</td>
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<td>7.0</td>
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<tr>
<td>Somewhat agree</td>
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<td>4.2</td>
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<tr>
<td>Neutral</td>
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<td>26.8</td>
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Table 2 Continued

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<th>Opinion</th>
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</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>28</td>
<td>39.4</td>
</tr>
<tr>
<td>Somewhat disagree</td>
<td>8</td>
<td>11.3</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>5</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Sexual Intercourse before Marriage is Not a Sin Opinion

<table>
<thead>
<tr>
<th>Opinion</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>2</td>
<td>2.8</td>
</tr>
<tr>
<td>Somewhat agree</td>
<td>3</td>
<td>4.2</td>
</tr>
<tr>
<td>Agree</td>
<td>3</td>
<td>4.2</td>
</tr>
<tr>
<td>Neutral</td>
<td>5</td>
<td>7.0</td>
</tr>
<tr>
<td>Disagree</td>
<td>11</td>
<td>15.5</td>
</tr>
<tr>
<td>Somewhat disagree</td>
<td>7</td>
<td>9.9</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>40</td>
<td>56.3</td>
</tr>
</tbody>
</table>
Table 3

*Correlations for Selected Demographics and Theology Variables with Sexuality Variables (N = 71)*

<table>
<thead>
<tr>
<th></th>
<th>Desire Frequency</th>
<th>Desire Intensity</th>
<th>Sexual Energy</th>
<th>HSDD a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.05</td>
<td>-.19</td>
<td>-.14</td>
<td>.06</td>
</tr>
<tr>
<td>Years in Church</td>
<td>-.01</td>
<td>-.20*</td>
<td>-.09</td>
<td>.01</td>
</tr>
<tr>
<td>Number of Years Married</td>
<td>-.09</td>
<td>-.27**</td>
<td>-.19</td>
<td>.12</td>
</tr>
<tr>
<td>Times Married</td>
<td>.12</td>
<td>.13</td>
<td>.13</td>
<td>-.09</td>
</tr>
<tr>
<td>Income</td>
<td>.09</td>
<td>.16</td>
<td>.11</td>
<td>-.10</td>
</tr>
<tr>
<td>Education</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>School Prayer b</td>
<td>.22*</td>
<td>.13</td>
<td>.21*</td>
<td>-.11</td>
</tr>
<tr>
<td>Premarital Sex b</td>
<td>.06</td>
<td>.31***</td>
<td>.15</td>
<td>-.09</td>
</tr>
<tr>
<td>Authority Over Men b</td>
<td>-.33****</td>
<td>-.33****</td>
<td>-.37****</td>
<td>.32***</td>
</tr>
<tr>
<td>Sabbath Rest b</td>
<td>-.22*</td>
<td>-.20*</td>
<td>-.24**</td>
<td>.13</td>
</tr>
</tbody>
</table>

* p = .10.  ** p = .05.  *** p = .01.  **** p = .005.  ***** p = .001.

a Hypoactive sexual desire disorder (HSDD): 0 = No  1 = Yes

b High score represents a theologically liberal opinion
Table 4

*Correlations for Selected Sexuality Variables with Religious Orientation Variables*

(*N = 71*)

<table>
<thead>
<tr>
<th></th>
<th>Religious CROS</th>
<th>Premarital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Opinion (b)</td>
<td>Score (b)</td>
</tr>
<tr>
<td>Presence of HSDD a</td>
<td>-.06</td>
<td>.09</td>
</tr>
<tr>
<td>Sexual Desire/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest Frequency</td>
<td>.06</td>
<td>-.15</td>
</tr>
<tr>
<td>Sexual Desire/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest Intensity</td>
<td>.10</td>
<td>-.01</td>
</tr>
<tr>
<td>Sexual Energy</td>
<td>.09</td>
<td>-.13</td>
</tr>
<tr>
<td>Masturbation b</td>
<td>.27**</td>
<td>.38*****</td>
</tr>
<tr>
<td>Premarital Sex b</td>
<td>.26**</td>
<td>.50*****</td>
</tr>
</tbody>
</table>

*p = .10.  **p = .05.  ***p = .01.  ****p = .005.  *****p = .001.

a Hypoactive sexual desire disorder (HSDD): 0 = No 1 = Yes

b High score represents a theologically liberal orientation

CROS = Christian Religious Orientation Scale

TRO = Total Religious Orientation
Table 4 displays the point-biserial correlations for selected sexuality variables and theological opinion variables. A liberal religious self-rating was positively correlated with having a liberal viewpoint on masturbation ($r = .27$), and a liberal viewpoint related to premarital sex ($r = .26$). A high score on the Christian Religious Orientation Scale (CROS) scale reflected a liberal theological viewpoint. It was positively correlated with liberal views on masturbation ($r = .38$), and premarital sex ($r = .50$). A high score on the Total Religious Orientation (TRO) scale reflected a liberal theological viewpoint. It was positively correlated with liberal views on masturbation ($r = .37$), and premarital sex ($r = .43$). A liberal viewpoint related to masturbation was not associated with any of the variables. A liberal view related to premarital sex was positively correlated with the sexual energy variable ($r = .31$). The religious self-rating variable, the CROS score or the TRO were all not significantly related to presence of HSDD, frequency of sexual desire, intensity of sexual desire, or the sexual energy variable (Table 4).
Table 5

*Prediction of Level of Sexual Desire Based on Selected Variables. Backward Elimination Regression Model (N = 71)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>p</th>
<th>sr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.344</td>
<td>0.112</td>
<td>-0.351</td>
<td>0.003</td>
<td>-0.294</td>
</tr>
<tr>
<td>Number of Times Married</td>
<td>0.518</td>
<td>0.191</td>
<td>0.308</td>
<td>0.009</td>
<td>0.259</td>
</tr>
<tr>
<td>Income</td>
<td>0.565</td>
<td>0.203</td>
<td>0.290</td>
<td>0.007</td>
<td>0.266</td>
</tr>
<tr>
<td>Masturbation a</td>
<td>0.135</td>
<td>0.071</td>
<td>0.189</td>
<td>0.063</td>
<td>0.181</td>
</tr>
<tr>
<td>Jesus Miraculously Changed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real Water to Wine a</td>
<td>-0.147</td>
<td>0.075</td>
<td>-0.212</td>
<td>0.056</td>
<td>-0.186</td>
</tr>
<tr>
<td>Submission of Wives a</td>
<td>0.105</td>
<td>0.052</td>
<td>0.218</td>
<td>0.048</td>
<td>0.193</td>
</tr>
<tr>
<td>Premarital Sex a</td>
<td>0.162</td>
<td>0.063</td>
<td>0.259</td>
<td>0.013</td>
<td>0.245</td>
</tr>
<tr>
<td>Authority Over Men a</td>
<td>-0.257</td>
<td>0.055</td>
<td>-0.490</td>
<td>0.001</td>
<td>-0.446</td>
</tr>
</tbody>
</table>

Final Model: $F (8, 62) = 5.91, p = .001, R^2 = .433.$

* High score represents a theologically liberal opinion.
Table 6

*Prediction of Frequency of Sexual Desire Based on Selected Variables. Backward Elimination Regression Model (N = 71)*

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>p</th>
<th>sr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Times Married</td>
<td>0.351</td>
<td>0.186</td>
<td>0.208</td>
<td>0.063</td>
<td>0.198</td>
</tr>
<tr>
<td>School Prayer <em>a</em></td>
<td>0.133</td>
<td>0.065</td>
<td>0.228</td>
<td>0.046</td>
<td>0.214</td>
</tr>
<tr>
<td>Masturbation <em>a</em></td>
<td>0.154</td>
<td>0.082</td>
<td>0.214</td>
<td>0.066</td>
<td>0.196</td>
</tr>
<tr>
<td>Submission of Wives <em>a</em></td>
<td>0.141</td>
<td>0.057</td>
<td>0.292</td>
<td>0.015</td>
<td>0.262</td>
</tr>
<tr>
<td>Jesus Christ was Born of a Virgin <em>a</em></td>
<td>-0.452</td>
<td>0.167</td>
<td>-0.312</td>
<td>0.009</td>
<td>-0.283</td>
</tr>
<tr>
<td>Authority Over Men <em>a</em></td>
<td>-0.167</td>
<td>0.061</td>
<td>-0.317</td>
<td>0.008</td>
<td>-0.287</td>
</tr>
<tr>
<td>Sabbath Rest <em>a</em></td>
<td>-0.135</td>
<td>0.064</td>
<td>-0.230</td>
<td>0.038</td>
<td>-0.222</td>
</tr>
</tbody>
</table>

Final Model: F (7, 63) = 3.94, p = .001, $R^2 = .305$.

*a* High score represents a theologically liberal opinion.
### Table 7

**Prediction of Sexual Energy Based on Selected Variables. Backward Elimination Regression Model (N = 71)**

<table>
<thead>
<tr>
<th></th>
<th>$B$</th>
<th>$SE$</th>
<th>$\beta$</th>
<th>$p$</th>
<th>$sr$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masturbation $^a$</td>
<td>0.885</td>
<td>0.438</td>
<td>0.230</td>
<td>0.047</td>
<td>0.216</td>
</tr>
<tr>
<td>Jesus Christ was Born of a Virgin $^a$</td>
<td>-1.604</td>
<td>0.933</td>
<td>-0.207</td>
<td>0.090</td>
<td>-0.184</td>
</tr>
<tr>
<td>Premarital Sex $^a$</td>
<td>0.872</td>
<td>0.390</td>
<td>0.260</td>
<td>0.029</td>
<td>0.239</td>
</tr>
<tr>
<td>Authority Over Men $^a$</td>
<td>-1.203</td>
<td>0.309</td>
<td>-0.427</td>
<td>0.001</td>
<td>-0.416</td>
</tr>
</tbody>
</table>

Final Model: $F (4, 66) = 5.42, p = .001, R^2 = .247$.

$^a$ High score represents a theologically liberal opinion.
Table 8

*Logistic Regression Model Predicting Presence of HSDD (N = 71)*

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>p</th>
<th>OR</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authority Over Men (^b)</td>
<td>0.34</td>
<td>0.13</td>
<td>.01</td>
<td>1.41</td>
<td>1.08</td>
<td>1.83</td>
</tr>
</tbody>
</table>

95% CI

Classification Rates: Baseline (59.2%) and Final Model (67.6%)

Final Model: \(\chi^2 (1, N = 71) = 7.21, p = .007\)

Table 8 displays the results of the backward elimination logistic regression model predicting the presence of HSDD. Using 27 candidate variables, the final model included one independent variable. The rating for Item 15, “Women cannot morally assume a role of authority over men” reflected a more liberal theological view for those women with HSDD \((p = .01, 95\% CI = 1.08 – 1.83)\). As stated previously, the rate of HSDD in this sample was 59.2%, which provides the baseline classification rate. The final model correctly classified 67.8% of the respondents. More specifically, this model correctly classified 35 of 42 respondents (83.3%) with HSDD and 13 of 29 respondents (44.8%) without HSDD.