

THE RELATIONSHIP AMONG MARITAL QUALITY, SEXUAL FREQUENCY,
SEXUAL DISAGREEMENT, DEPRESSION, AND MARRIED WOMEN'S
SEXUAL SATISFACTION

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THESIS ABSTRACT

THE RELATIONSHIP AMONG MARITAL QUALITY, SEXUAL FREQUENCY,
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Women's sexual satisfaction is linked to several relational and individual factors. In particular, sexual satisfaction appears to covary with the general quality of women's marital relationships and the level of intimacy and closeness in the sexual relationship. In addition, aspects of the sexual relationship including frequency of sexual activity and disagreement about sex are related to women's sexual satisfaction. Finally, individual factors such as depression are associated with women's sexual satisfaction. The purpose of this study is to examine the interrelationship among these factors. Specifically it is hypothesized that marital quality is associated with women's sexual satisfaction, depression is associated with women's sexual satisfaction, the relationship between

depression and sexual satisfaction is indirectly related through marital quality, sexual frequency and sexual communication are directly related to women's sexual satisfaction, and the relationship between marital quality and sexual satisfaction are indirectly related through sexual frequency and sexual communication.

The data for this study come from the National Survey of Families and Households (NSFH). The subsample consists of 3,884 married couples who completed the survey in wave two, which was collected from 1988 until 1992. Results reveal that over 70% of the variability in women's sexual satisfaction is accounted for by marital quality, couple's sexual frequency, couple's sexual disagreement, and women's depression. Marital quality and sexual frequency prove to have the largest direct relationship with women's sexual satisfaction. Couple's sexual disagreement and women's depression are less strongly linked with women's sexual satisfaction. Depression and sexual satisfaction are related indirectly through marital quality. Finally, marital quality and sexual satisfaction are also indirectly related through couple's reports of sexual frequency and couple's reports of sexual disagreement. Discussion focuses on the implications of these findings and directions for future research.

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I. INTRODUCTION

An abundance of literature exists regarding the myriad factors that contribute to sexual satisfaction. The study of women's sexuality, however, has been neglected or obscured by comparisons with the sexuality of men (Everaerd, Laan, Both, & Van Der Velde, 2000). The seminal study by Alfred Kinsey regarding female sexual behavior published in 1953, five years after the study of "Sexual Behavior in the Human Male," addressed topics such as women's fantasies, masturbation, sexual patterns within marriage and outside the context of marriage, and experiences of orgasm (Kinsey, Pomeroy, Martin, & Gebhard, 1976). Though Kinsey's research broadened the literature, the study did not address specifically women's sexual satisfaction.

Comparisons of the sexuality of women and men have aimed largely at increasing awareness of similarities in physiological and psychological mechanisms (Kolodny, Masters, & Johnson, 1979). Only recently have women been empowered to express their sexual concerns. Everaerd, Laan, Both, and Van Der Velde (2000) write in their article regarding female sexuality that one of the most important reasons for the denial of women's sexuality is the actual "absence of women in science and the consequent dominance of male imagery about sexuality." In Wincze and Carey's treatment manual "Sexual Dysfunction," the authors note that "historically, less attention has been paid to female sexuality issues than to male sexuality issues..." and that "although the number of research studies devoted to female sexuality still lags far behind research for men, there are signs of increased scientific study" (Wincze & Carey, 2001, p.33).

Sexual satisfaction among women has been linked to a number of relational factors. In particular, sexual satisfaction has been associated with the general quality of

women's marital relationships. Research suggests that sexual satisfaction tends to act as a barometer of marital satisfaction (Perlman & Abramson, 1982; Schenk, Pfrang, & Rausche, 1983). Marital satisfaction is important for women because women are socialized to desire emotional closeness before sexual intimacy can occur (Baldwin & Baldwin, 1997). As children, women are taught that society expects women to be chaste until marriage which influences women's sexual behavior and creates a situation in which women who engage in premarital sex feel guilty. Furthermore, because women are socialized not to be sexual creatures, and to put more stock in the emotional and relational aspects of relationships, women come to value emotional intimacy and are less likely to want or to engage in sexual activity without an emotional attachment (Baldwin & Baldwin, 1997). It is not surprising then, that closeness and intimacy have been found to be associated with women's marital and sexual satisfaction (Hurlbert et al., 1993; Rosenzweig & Dailey, 1989; Young, Denny, Young, & Luquis, 2000).

It is also not surprising that factors specific to the sexual domain within marriage are associated with women's marital and sexual satisfaction. From a systems perspective (General Systems Theory or GST), it is important to examine the sexual relationship within marriage utilizing the couple's views of their sexual relationship. GST describes the husband-wife dyad as a single unit and in order to understand this unit it is important to examine it as a cogent whole, using both husband and wife reports.

Pertaining to the sexual domain within marriage, several studies have shown a positive relationship between frequency of sex and both marital satisfaction (Call, Sprecher, & Schwartz, 1995; Donnelly, 1993; Renaud, Byers, & Pan, 1997) and sexual satisfaction (Haavio-Mannila & Kontula, 1997; Hurlbert, Apt, & Rabehl, 1993; Perlman & Abramson, 1982; Pinney, Gerard, & Denney, 1987; Renaud, Byers, & Pan, 1997; Young, Denny, Young, & Luquis, 2000; Young & Luquis, 1998; Zhou, 1993). That is, men and women who report that they are pleased with the frequency of their sexual

activity also report high levels of marital and sexual satisfaction. These findings are consistent with research that indicates the more sex couples have, the more satisfied they are with their sex lives (Haavio-Mannila & Kontula, 1997; Hurlbert, Apt, & Rabehl, 1993; Perlman & Abramson, 1982; Pinney, Gerard, & Denney, 1987; Renaud, Byers, & Pan, 1997; Young, Denny, Young, & Luquis, 2000; Young & Luquis, 1998; Zhou, 1993).

Just as frequency of sexual activity is related to women's marital and sexual satisfaction, communication with one's partner about sexual matters is correlated with satisfaction among women (Banmen & Vogel, 1985; Byers & Demmons, 1999; Cupach & Comstock, 1990; MacNeil & Byers, 1997; Purnine & Carey, 1997). Several studies have confirmed the notion that greater levels of sexual communication are associated with increases in one's overall relationship satisfaction and sexual satisfaction.

Specifically, Banmen and Vogel (1985) suggest that couples high on sexual communication are able to relate to each other and solve their problems, which is related to marital satisfaction. A study of interpersonal communication and sexual adjustment by Purnine and Carey (1997), found that, for both men and women, sexual satisfaction was associated with couple agreement on sexual practices. When couples prefer the same sexual behaviors, however, it is more likely that sexual activities will occur according to what each partner considers acceptable and desirable, which contributes to sexual satisfaction. It is understandable that when a couple disagrees on their preferred sexual practices, the couple is less likely to have their sexual needs and desires met, and is thus, less likely to be sexually satisfied. Sexual disagreement among couples, therefore, detracts from women's sexual satisfaction.

Finally, when examining variables that are associated with women's sexual satisfaction, it is important to consider individual difference factors. Specifically, depression has been shown to affect both marital and sexual satisfaction. Several studies reveal that depression and marital satisfaction are negatively correlated (Davila, Karney,

Hall, & Bradbury, 2003; Riso et al., 2002; Uebelacker, Courtnage, Whisman, 2003).

That is, those who suffer from depression report lower marital satisfaction. The relationship between depression and sexual satisfaction also has been examined. People who are depressed often suffer from anhedonia which is the inability to experience pleasure in normally pleasurable acts (Hurlbert, 1991). Therefore, it is likely that those who suffer from depression are less likely to desire sexual pleasure or when they engage in sexual activity, they are less likely to derive pleasure from the activity, which contributes to their lack of sexual satisfaction. Two studies revealed findings that suggested depression was related to women's lack of sexual satisfaction (Frohlich & Meston, 2002; Cyranowski et al., 2004). So, the less depressed a woman is, the more satisfied she is likely to be with her sex life.

In summary, it appears that women's sexual satisfaction within the context of marriage is associated with both relational and individual difference factors. It is not clear from the literature, however, how these factors work together to influence marital satisfaction. For example, we do not know the extent to which these variables uniquely influence sexual satisfaction, nor do we know whether marital satisfaction, aspects of the sexual relationship, and depression are directly and/or indirectly related to sexual satisfaction. Without an understanding of the interrelationship among factors that are associated with sexual satisfaction, it is difficult to make recommendations for appropriate program content focused on enhancing women's sexual satisfaction. Programs that reflect an emphasis on empirically derived factors that directly correlate with women's sexual satisfaction and those that are indirectly related with these factors are most likely to be effective in promoting and maintaining high levels of sexual satisfaction within marriage. In a similar manner, information about the direct and indirect influences of relational, sexual, and individual factors may be useful to therapists and counselors. Therapists and counselors must have an empirically-based understanding

of women's sexual satisfaction and the factors that play important roles in women's satisfaction because the majority of couples who enter clinical settings presenting with couple issues have lower marital and sexual satisfaction.

Thus, the purpose of this study is to simultaneously examine the relationship among depression, marital satisfaction, sexual disagreement, sexual frequency, and women's sexual satisfaction. Specifically, our goal is to test the directional model presented in Figure 1. Given the strong association between depression and marital satisfaction and between marital satisfaction and sexual satisfaction, it is expected that marital satisfaction will indirectly influence the relationship between depression and sexual satisfaction. With regard to marital satisfaction and sexual satisfaction, it is likely that aspects of the couple's sexual relationship such as sexual frequency and disagreement about sexual matters will indirectly influence the relationship between marital quality and sexual satisfaction.

Therefore it is hypothesized that,

1. Marital quality will be associated with women's sexual satisfaction
2. Depression will be associated with women's sexual satisfaction
3. The relationship between depression and sexual satisfaction will be indirectly related through marital quality.
4. Sexual frequency and sexual disagreement will be directly associated with women's sexual satisfaction.
5. The relationship between marital quality and sexual satisfaction will be indirectly related through sexual frequency and sexual disagreement.

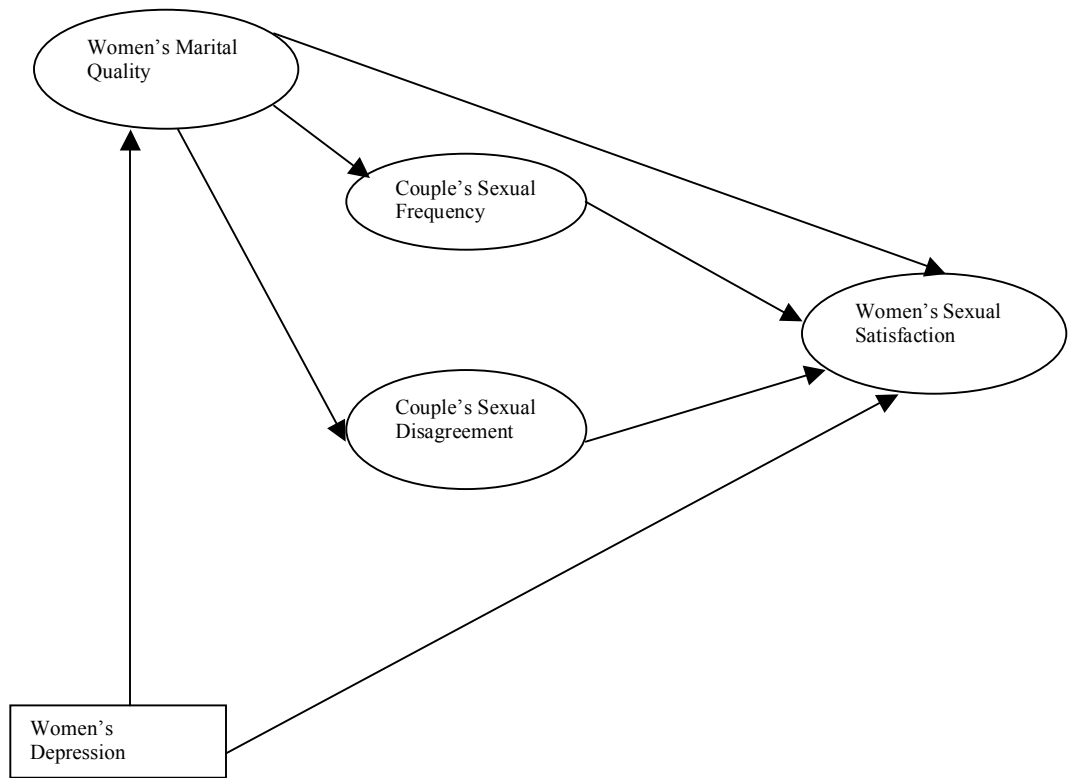


Figure 1.

Hypothesized Model of Married Women's Sexual Satisfaction

II. REVIEW OF LITERATURE

This review of literature is organized into four main sections. The first section includes articles about women's marital quality with an emphasis on intimacy and relationship satisfaction and their association with sexual satisfaction. The second section addresses marital quality and aspects of the sexual relationship including sexual disagreement and frequency of sexual activity. The third section includes literature about the link between sexual disagreement and sexual satisfaction and frequency of sexual activity and sexual satisfaction. The fourth and final section focuses on depression and the association between marital satisfaction and depression and sexual satisfaction and depression.

Women's Relationship Quality

In order to understand the connection between relationship quality and sexual satisfaction, one must understand the socialization process of women and how women are raised to view sex. Women are socialized differently than men, especially regarding sexual issues and sexual behavior. This socialization process creates a difference in the way men and women think about sex and what men and women desire in a sexually satisfying relationship. In a review of literature regarding gender and sexual behavior, Maccorquodale (1989) suggests that, as children, girls are discouraged from exploring their bodies and are especially discouraged from masturbating. Women learn that

physical pleasure received from touching their genitalia is looked down upon (Baldwin & Baldwin, 1997).

As girls mature into young women, parents and other adults send messages to girls that sex is a very risky behavior and girls are warned against the dangers of sex such as pregnancy and STD's (Baldwin & Baldwin, 1997; Maccorquodale, 1989). Boys, on the other hand, are encouraged by adults and peers to freely explore their sexuality, to sow their wild oats, and to become sexually experienced before marriage. The message that society sends males regarding the importance of becoming sexually experienced stems from the notion that for males, sex is viewed as a biological urge that requires regular expression (Maccorquodale, 1989). Women, in contrast, are viewed by society as less interested in sex and more interested in the social and relational aspect of relationships. Evidence of this view of men and women by society can be seen in the fact that men are more willing to engage in casual sex and actually do engage in casual sex more frequently than do women (Baldwin & Baldwin, 1997; Maccorquodale, 1989). This societal double standard sends the message to girls that physical pleasure derived from sex is meant for males, while the intimacy and closeness derived from sex is meant for females. Regarding the double standard, Maccorquodale suggests that, "the sexual activity of men is tolerated, encouraged, and yields few negative consequences; sexuality for females is controlled, restricted, and subject to censure for violations of norms" (1989, p.100).

Pertaining to the idea that females are censured for violating norms, sexual behavior before marriage damages a woman's reputation because of the societal expectation that "nice girls" save themselves for marriage. Female peer groups also

subject their members to censure regarding societal norms for sexual behavior. Girls are more likely to receive mixed responses from their friends about early sexual activation. An underlying message for girls in their peer group is the fear that the girl may be labeled a slut or worse if she has sex with too many boys (Baldwin & Baldwin, 1997). Boys, in contrast, receive a message of approval from their peer group regarding early sexual activities. Males gain social status when they become sexually active and are likely to boast to their friends about their sexual conquests (Baldwin & Baldwin, 1997).

There are several studies that suggest underlying reasons regarding the notion that women often engage in sex for emotional closeness (Baldwin & Baldwin, 1997; Rosenzweig & Dailey, 1989). Research indicates that women value talking about relationships more than men do (Maccorquodale, 1989) and that women are more accepting of expressions and feelings than are men. Also, evolutionary theory suggests several reasons for the relationship between men wanting physical pleasure when engaging in sex and women wanting emotional closeness when engaging in sex. Evolutionary theory explains that, because women must invest nine months of pregnancy, months or a year of breast-feeding, and several years dedicated to childrearing, women are more interested in being selective when choosing a mate. Because men, on the other hand, do not carry the responsibility of pregnancy, breastfeeding, and, historically, were not as responsible for childrearing, they can afford to be less choosy in a mate and can alternatively mate with several women. Evolutionary theory purports that, because of men's and women's different reproductive strategies, men and women desire different

qualities in a mate. Women, because they invest so much in their offspring, desire a mate who shows signs that he would be committed to help in raising children (Baldwin & Baldwin, 1997).

Over time, this desire for a committed mate may resemble a desire for a more emotionally attached mate who desires emotional closeness, intimacy, and commitment. McCormick (1994) defines intimacy as the “human ability to connect with somebody else, emotionally, intellectually, and physically.” Intimacy also refers to shared goals, shared interactions, freely exchanging ideas and feelings, shared time, and shared resources (McCormick, 1994). McCormick purports that women value emotional intensity in their close relationships more highly than do men partly because women show love by being emotionally intimate.

In one of the first studies to examine sexual satisfaction in the context of relationships, Perlman and Abramson (1982) found that relationship happiness was important in understanding sexual satisfaction. Fifty-seven males and 91 females, 58% of whom were married while 42% were cohabitating, were surveyed about their attitudes toward sex, attitudes toward their body, previous sexual experience, factual knowledge about sex, sexual communication, pleasure, anxiety, affective connection, and life stress. These nine predictor variables were selected by the authors based upon theoretical considerations and previous literature. Results indicated that an important variable for sexual satisfaction was relationship happiness ($r = .46$, $p < .001$).

A study conducted by Hurlbert, Apt, and Rabehl (1993) supports the link between emotional intimacy and sexual satisfaction. Based on an examination of existing literature they focused on several variables associated with married women’s sexual

satisfaction including a close emotional relationship with one's partner (Darling, Davidson, & Cox, 1991; Davidson & Darling, 1988; Rosenzweig & Dailey, 1989), relationship commitment and the quality of communication between the couple (Banmen & Vogel, 1985; Hurlbert, 1991; Schenk, Pfrang, & Rausche, 1983), the quality of one's relationship with one's partner (Darling, Davidson, & Cox, 1991; Hurlbert & Whittaker, 1991), frequency of sexual activity (McCann & Biaggio, 1989), participation in foreplay (Snyder & Berg, 1983), and orgasm consistency (Newcomb & Bentler, 1983). The sample included 161 married women obtained from a volunteer sign-up roster soliciting participation in a confidential sex survey. The authors performed a step-wise multiple regression analysis to determine which variables were most predictive of sexual satisfaction. Findings suggested that greater sexual satisfaction was associated with greater closeness within the marital relationship, defined as frequent interaction with one's spouse, interacting with one's spouse in a diverse number of activities, and those activities having a strong impact on the relationship, greater sexual assertiveness, higher erotophilia (defined as the extent to which individuals affectively respond to sexual cues along a negative or erotophobic to a positive or erotophilic dimension), greater sexual excitability, greater sexual desire, higher frequency of sexual activity, and more orgasms. When the above seven variables were entered into the equation, the total amount of variance in sexual satisfaction accounted for was 56.39%. Only assertiveness, erotophilia, and relationship closeness added to the prediction of sexual satisfaction over and above the other variables. Alone, assertiveness, erotophilia, and relationship closeness accounted for 55.41% of the variance explaining sexual satisfaction, which is

not significantly less than that accounted for by all seven variables. In sum, relationship closeness was found to be an important correlate of female sexual satisfaction.

Young and Luquis (1998) tested a hypothesis concerning possible factors relating to sexual satisfaction within marriage based on the responses of a sample of 797 married men ($n = 181$) and women ($n = 616$). Five variables were chosen based on existing research findings suggesting that the quality of a relationship, relationship closeness, and emotional intimacy are associated with sexual satisfaction (Darling, Davidson, & Cox, 1991; Hurlbert, et al., 1993; Lawrance & Byers, 1995; Newcomb & Bentler, 1983; Rosenzweig & Dailey, 1989), that the timing of orgasm and orgasmic consistency are related to sexual satisfaction (Darling, Davidson, & Cox, 1991; Hurlbert et al., 1993; Zhou, 1993), and that frequency of sexual activity is related to sexual satisfaction (Zhou, 1993). Based on previous research, the authors expected that overall satisfaction with marriage, satisfaction with non-sexual aspects of the relationship operationalized as shared goals, respect for one's partner, and recreational companionship, frequency of spouse/partner orgasm per sexual encounter, frequency of sexual activity, and sexual uninhibitedness would account for a significant amount of variance in sexual satisfaction.

Using multiple regression analysis these five variables accounted for 60.2% of the variance in sexual satisfaction. Overall satisfaction with marriage was most highly associated with sexual satisfaction, $r = .62$. This finding supports the research suggesting that women's reports of satisfaction with their sexual relationship is significantly related to the overall quality of their marital relationship. The second highest correlation occurred among sexual satisfaction and non-sexual aspects of the relationship defined as shared goals, respect, and recreational companionship, $r = .61$. In fact, marital

satisfaction and satisfaction with the non-sexual aspects of the relationship were the only two variables of the five that correlated with sexual satisfaction at $r = .30$ or greater.

Although the unique contribution of each variable in predicting sexual satisfaction was not determined, it is important to note that the correlations among marital satisfaction and sexual satisfaction and among satisfaction with non-sexual aspects of the relationship and sexual satisfaction were substantial.

Young, Luquis, Young, and Denny (2000) conducted a study designed to examine variables that seem related to married women's sexual satisfaction based on previous research including orgasm consistency or frequency (Darling, Davidson, & Cox, 1991; Hurlbert et al., 1993; Zhou, 1993), frequency of sexual activity (Bentler & Peeler, 1979; Hurlbert et al., 1993; Zhou, 1993) religiosity (Davidson, Darling, & Norton, 1995), and overall relationship satisfaction (Darling, Davidson, & Cox, 1991; Hurlbert et al., 1993; Lawrance & Byers, 1995; Newcomb & Bentler, 1983; Rosenzweig & Dailey, 1989). The sample consisted of 641 married women from a sample, stratified by age, of 5000 married adults, yielding a response rate of 25.5%. The sample of 5000 married adults represented 49 of the 50 states and included 1000 potential respondents ages 20-29, 1000 ages 30-39, 1000 ages 40-49, 1000 ages 50-59, and 1000 age 60 and older. Potential participants were recruited through a mailing list purchased from a national corporation that provides mailing lists for research and marketing purposes.

The purpose of the study was to identify a combination of factors, not to isolate specific predictor variables, that are associated with women's sexual satisfaction. Nine independent variables were entered into the multiple regression model in order of greatest to least theoretical importance: nonsexual aspects of the relationship (defined as shared

goals, dreams, plans, thoughts, and feelings with one's partner, having a great deal of respect for one's partner, and one's spouse being a "valued companion in recreational activities"), overall satisfaction with the marriage, consistency of self-spouse orgasm, frequency of sexual activity, participation and enjoyment of non-coital sexual activity, age, religiosity, one's perception of God's view of sex, and the interaction of these last two variables. Though the authors did not separate out each predictor variable to determine what unique variance each variable contributed to sexual satisfaction, the nine variable model predicted 65% of the variance in married women's sexual satisfaction. The author's findings are consistent with existing research regarding the association between overall satisfaction and sexual satisfaction, though overall marital satisfaction's unique contribution to women's sexual satisfaction was not determined.

A number of studies have been conducted in non-U.S. countries with a similar purpose of examining correlates of women's sexual satisfaction. Schenk, Pfrang, and Rausche (1983) examined how the quality of the marital relationship was related to sexual satisfaction in a Bavarian sample. Six hundred and thirty-one couples married an average of 10 years who were classified as highly educated and upper middle class, answered a questionnaire containing items measuring marital interaction. Questions measured mutual appreciation and support, arguments, frankness toward the partner, interest and pleasure in the partner, importance of sexuality, and satisfaction in sexual interaction. The subscale measuring mutual appreciation and support assessed participants' empathy with their partner, acceptance of and pleasure in his or her individuality, solidarity with and support of the partner, knowing the wishes of one's partner, accepting one's partner with all his or her merits and deficiencies, feeling

affection for one's partner, showing one's partner affection, supporting one's partner when he or she is in difficulty, siding with one's partner, and looking after one's partner when necessary. Marital happiness was measured by participants reporting if they were happy in their marriage, if they had ever seriously thought of separation or divorce, if they would remarry their present partner, and if they would describe their relations with their partner as affectionate. Satisfaction in sexual interaction was measured with items concerning a participant's satisfaction with intercourse, agreeing with the partner's wishes, talking freely about sex, and frequency of sexual intercourse.

For women, a positive correlation was found with appreciation and support and satisfaction in sexual interaction. The authors conclude that "the importance of sexuality for women increases if they appreciate their partners and if they have experienced only little refusal of support" (Schenk, Pfrang, & Rausche, 1983). In sum, this study supports the claim that marital sexuality seems to be closely related to the quality of the relationship for women.

Patton and Waring (1985) examined the relationship between sexuality and marital intimacy in a random sample of 250 British couples. The couples were predominantly white, middle-class Protestants who had been married an average of 22 years and had an average of two children. Marital intimacy was broken into eight dimensions and operationalized as follows: (1) conflict resolution--the ease with which differences of opinion are resolved, (2) affection--the degree to which feelings of emotional closeness are expressed by the couple, (3) cohesion--a commitment to the marriage, (4) sexuality--the degree to which sexual needs are communicated and fulfilled, (5) identity--the couple's level of self-confidence and self-esteem, (6) compatibility--the

degree to which the couple is able to work and play together comfortably, (7) autonomy--the couple's degree of positive connectedness to family and friends, and (8) expressiveness--the degree to which thoughts, beliefs, attitudes, and feelings are communicated within the marriage. Findings indicated that, for wives, sexuality correlated above .30 with affection (.43), cohesion (.40), and expressiveness (.33). Consistent with existing research, these results suggest that wives' sexual fulfillment is closely related to the emotionally intimate aspects of marriage such as expressed emotional closeness, commitment, and shared beliefs, thoughts, attitudes, and feelings.

Lawrance and Byers (1995), in a quest to create a model of sexual satisfaction, recognized the importance of relationship variables in understanding the concept of sexual satisfaction. They asserted that a "model of sexual satisfaction needs to take into account the interpersonal context in which the sexual activity occurs," so they developed an exchange model to explain sexual satisfaction. The Interpersonal Exchange Model of Sexual Satisfaction (IEMSS) focuses on the level of rewards and costs that partners exchange in their sexual relationship. Rewards are defined as "exchanges that are pleasurable and gratifying" while costs are defined as "exchanges requiring physical or mental effort or those producing pain, embarrassment, or anxiety." The IEMSS also incorporates one's comparison level defined as "the standard against which individuals judge the attractiveness of their rewards and costs" or the "level of rewards and costs that the individual expects to receive in a sexual relationship." Lastly, the model includes the perceived equality between one's own and one's partner's level of rewards and between one's own and one's partner's level of costs. Thus, sexual satisfaction, according to the IEMSS, is greatest when one's level of rewards is high, one's level of costs is low, and

rewards exceed costs. Also, sexual satisfaction is expected to be high when equality is perceived to exist between one's own and one's partner's level of rewards and costs.

Using a Canadian sample of 94 men and 150 women in heterosexual relationships ranging in age from 20 to 66 and ranging in length from 1 to 40 years, participants were given a number of questionnaires including the Exchanges Questionnaire (Lawrance & Byers, 1992a, 1992b) which assesses participants' level of rewards and costs in their sexual relationship, the Global Measure of Sexual Satisfaction (Lawrance & Byers, 1992a, 1992b), the Global Measure of Relationship Satisfaction (Lawrance & Byers, 1992a, 1992b), and the Rewards/Costs Checklist (Lawrance & Byers, 1992b). The final regression equation included the IEMSS components of rewards, costs, comparison level, and perceived equality between one's own and one's partner's level of rewards and costs and relationship satisfaction which accounted for 79% of the variance in sexual satisfaction. Furthermore, after controlling for the IEMSS components, relationship satisfaction was uniquely related to sexual satisfaction. This finding suggests that relationship satisfaction is closely associated with sexual satisfaction.

In a longitudinal study of sexual satisfaction in a Finnish sample of 2252 participants in 1971 and 1718 participants in 1992, Haavio-Mannila and Kontula (1997) examined correlates of sexual satisfaction based on previous research that included age and middle class background (Sprecher & McKinney, 1993), committed relationships (Pinney et al., 1987), effective contraceptive methods (Pinney et al., 1987), consistent orgasms (Hurlbert, 1991; Pinney et al., 1987), higher frequencies of sexual intercourse (Hurlbert, 1991; Pinney et al., 1987), effective communication about sex (Sprecher & McKinney, 1993), and sexual assertiveness (Hurlbert, 1991). Haavio-Mannila and

Kontula assessed how social background, sexual ideas, emotional relations between partners, sexual practices, and orgasm are associated with two measures of sexual satisfaction, physical sexual satisfaction and overall sexual satisfaction. Social background was operationalized as the age of participants, one's sexual and religious atmosphere in their childhood home, educational resources, and the timing of one's first sexual experience. Sexual ideas were operationalized as the importance of one's sex life among different spheres of one's life and sexual assertiveness. Sexual assertiveness was defined as the "subjective perception of being sexually skillful, active, and attractive." Emotional ties between partners was defined as a person who "really loves the respondent and that he or she really loves some woman or man." Sexual techniques and practices was operationalized as one's use of sexual materials, frequency of sexual intercourse, and the use of many techniques in sexual encounters including having used several positions while having intercourse, having engaged in oral or anal sex, and stimulating a partner's genitals by hand. Orgasm was operationalized as how often intercourse leads to orgasm and the ending of sexual tension.

Results indicated that women's physical sexual satisfaction was predicted by factors such as young age, sexual assertiveness, frequent sexual intercourse, using many techniques in sexual encounters, and orgasm. Emotional satisfaction was defined as "the happiness of the present steady relationship," which most studies operationalize as marital or relationship satisfaction. Results revealed that, for women, the association between emotional or relationship satisfaction and finding sexual intercourse pleasurable (physical sexual satisfaction) was $r = .29$. This means a modest correlation is shown to exist between relationship satisfaction and physical sexual satisfaction. Furthermore, for

women, the association between overall sexual satisfaction and emotional or relationship satisfaction was $r = .44$. This result means that a stronger correlation exists among overall sexual satisfaction and relationship satisfaction, as opposed to simply physical sexual satisfaction and relationship satisfaction.

Renaud, Byers, and Pan (1997) also examined predictor variables and their relationship to sexual satisfaction. A Chinese sample of 170 men and 191 women ranging in age from 21 to 77 who had been married from 1 to 42 years were sent a mailed questionnaire packet containing measures of relational and sexual satisfaction. Zero-order correlations were performed to examine the relationship between both relationship satisfaction and sexual satisfaction and several factors associated with the sexual relationship including erotophilia-erotophobia, frequency of physical affection, frequency of sexual activity, sexual concerns, sexual problems in one's self and one's partner, level of rewards, level of costs, number of rewards, number of costs, and impact of life events. Results suggested that, for both men and women, greater sexual satisfaction was associated with greater relationship satisfaction ($r = .70$ for men and $r = .57$ for women).

In sum, the existing research suggests that the quality of the marital relationship is associated with women's sexual satisfaction. Women who report high levels of closeness, intimacy, and overall marital satisfaction are also likely to describe themselves as sexually satisfied. The research does not address, however, the manner in which marital quality influences sexual satisfaction. It is not clear what the factors are that are influenced by marital quality, that in turn, are associated with sexual satisfaction. One possible pathway is through the sexual relationship. Specifically, it is likely that marital

quality is associated with the quality of the sexual relationship which then influences the level of sexual satisfaction within the marriage.

Marital quality and the sexual relationship

General systems theory (GST) describes the husband-wife dyad as a single unit (Whitchurch & Constantine, 1993). The husband-wife system is composed of the husband and wife, the interaction between husband and wife, and the attributes of the husband and wife that each bring to the relationship such as temperament, intellect, personality, attitudes, and feelings. One of GST's key assumptions is that a system must be understood as a whole rather than in component parts (Whitchurch & Constantine, 1993). That is, when these two individuals come together as a couple, something new is created in that the blending of two people becomes something greater than the sum of simply the two individuals.

GST also suggests that there are several components to the marital dyad such as marital communication, division of housework, and the sexual relationship (Whitchurch & Constantine, 1993). These aspects of the marital dyad cannot be separated from the subsystem of the marital relationship because they are, in fact, what make up the marital unit. In studying marital and sexual satisfaction within marriage, then, it is important to not only assess marital quality, but also examine the nature of the sexual relationship itself.

Furthermore, GST suggests the idea of recursiveness or mutual influence meaning that one's thoughts, feelings, and behaviors affect another's thoughts, feelings, and behaviors (Whitchurch & Constantine, 1993). Over time, thoughts, feelings, and behaviors of one partner consistently and reciprocally influence that of the other partner

and vice versa. Because husbands and wives are interdependent in their relationship, their behaviors are influenced by each other, meaning that what happens with the wife generally affects the husband and what happens with the husband generally affects the wife. Therefore, because women's marital and sexual satisfaction is closely linked, and because wives' and husbands' thoughts, feelings, and behaviors influence each other, it would seem that husbands' relationship factors may be related also to women's marital and sexual satisfaction.

Marital quality and sexual frequency

Donnelly (1993) examined correlates of frequency of sex within marriage using participants selected from the National Survey of Families and Households. With a sample size of 6,029 (55% female and 45% male), Donnelly hypothesized that participants who reported that they were unhappy or dissatisfied with their marriage would be more likely to report lower frequencies of sexual activity. Using logistic regression, results suggested that the lower one's report of marital happiness, the higher the likelihood that one is in a sexually inactive marriage. In other words, marriages in which partners reported high marital satisfaction also reported higher frequencies of sexual activity. Participants who were happy in their marriages were more likely to be sexually active with their partners than were their counterparts who reported lower marital satisfaction.

Call, Sprecher, and Schwartz (1995) also studied frequency of sexual activity among married couples. Using data from the National Survey of Families and Households collected between March 1987 and May 1988, 6,785 participants were selected based on marital status and having a spouse present in the home. It was

expected that the overall level of satisfaction in marriage would affect how often married couples have sex. Marital satisfaction was measured by a global question: "Taking things all together, how would you rate your marriage?" (1 = very unhappy to 7 = very happy). Results revealed that marital satisfaction was the variable second most highly associated with frequency of sexual activity, behind age. That is, the higher the report of overall marital satisfaction, the more frequency of sexual activity participants reported.

In a study using non-U.S. participants, Renaud, Byers, and Pan (1997), examined the frequency of affectionate and sexual behavior among a sample of 170 Chinese men and 191 Chinese women. They hypothesized that the frequency of affectionate and sexual behavior would be positively related to relationship satisfaction. Zero-order correlations revealed that greater relationship satisfaction was indeed associated with greater frequency of affectionate and sexual behavior. Specifically, for women, the correlation between frequency of sexual activity and relationship satisfaction was .23.

Marital quality and sexual disagreement

Banmen and Vogel (1985) studied the relationship between marital quality and sexual communication among two different groups: couples who were in therapy and couples who were not. A total of 88 participants were part of the study; 44 participants (22 couples) in therapy and 44 participants (22 couples) who reported their marriages to be satisfactory. Participants volunteered for the study, all were Caucasian, and had been in their current relationship for 2 years or longer. Participants were mailed packets of questionnaires which included the Dyadic Adjustment Scale (DAS; Spanier, 1976), the Marital Communication Inventory (MCI; Bienvenu, 1970), and the Sexual Communication Inventory (SCI; Bienvenu, 1977). The MCI is a 46-item scale that

measures patterns, characteristics, and styles of marital communication such as a couple's ability to listen, to understand the other, to express oneself, and the manner of saying things. The SCI is a 30-item scale that measures various aspects of couple's sexual communication such as the couple's sexual needs, likes and dislikes, their concerns and disagreements over sex, their ability to discuss sexual matters, to ask and to refuse, and to communicate through physical touch.

Using Pearson product-moment correlations, results suggested that marital adjustment and sexual communication were strongly and directly related ($r = .67$) for the entire sample of 88 participants. When the authors separated the two groups, however, the results changed. Although a strong relationship between marital adjustment and sexual communication remained, for couples who reported a satisfactory marriage, the correlation between marital adjustment and sexual communication was only .43. For those couples in marital therapy, the correlation was .68. When breaking the DAS into its four subscales, the correlation among marital satisfaction and sexual communication was .58, while couples not in therapy had a correlation of .28 among marital satisfaction and sexual communication. Furthermore, the authors imply that the overall communication process for well-adjusted couples allows the partners to relate to each other and to solve problems constructively, regardless of the nature of the problem.

Cupach and Comstock (1990) also examined the relationship among marital quality and sexual communication among a random sample of 402 male and female students who had been married an average of 10 years. They hypothesized that sexual communication satisfaction and marital adjustment would be significantly and positively related. As hypothesized, sexual communication satisfaction accounted for 14-29 percent

of the variance in marital adjustment variables as measured using the Dyadic Adjustment Scale (DAS; Spanier, 1976). The DAS' four subscales also were positively correlated with sexual communication satisfaction. The more maritally satisfied couples were, the more satisfied they were with their sexual communication. Specifically, the more cohesive they believed their marriage was, and the more perceived agreement in the marriage, the more satisfied they were with their sexual communication. The more the two partners in the marriage agreed with each other, the more satisfied they were with their sexual communication. Finally, high levels of expressed affect and closeness were associated with high levels of satisfaction with their sexual communication.

Byers and Demmons (1999) also examined the relationship between sexual communication satisfaction and relationship satisfaction. This study used a Canadian sample of 52 women and 47 men who were in college and involved in a dating relationship. Participants had been dating someone between 3 and 36 months, with an average length of relationship at 13.1 months. The sample was largely Caucasian and averaged 19.3 years in age. Participants were given several questionnaires including the Global Measure of Relationship Satisfaction (GMREL; Lawrance & Byers, 1998), the Global Measure of Sexual Communication Satisfaction (GMSCS), which was developed for this study, and a sexual communication measure which was also developed for this study. The GMREL consisted of the following question: "In general, how would you describe your overall relationship with your partner?" Respondents rated their relationship on five 7-point bipolar scales: good-bad, pleasant, unpleasant, positive-negative, satisfying-unsatisfying, and valuable-worthless. The GMSCS used the same format as the GMREL except that participants were asked to consider all the sexual

activities about which they and their partner might communicate such as kissing, touching, and intercourse and to describe their overall sexual communication with their partner on the same seven bipolar scales. The sexual communication measure inquired about partners communicating their likes and dislikes with regards to kissing, sexual touching, intercourse, receiving oral sex, giving oral sex, and sexual variety. The authors hypothesized that sexual communication and relationship satisfaction would be positively related. Zero-order correlations confirmed the hypothesis and revealed that individuals who reported greater relationship satisfaction also reported greater sexual communication.

The Sexual Relationship

Communication about sexual matters and men's and women's sexual satisfaction

Cupach and Metts (1991) discuss the importance of communication within sexual relationships. Cupach and Metts suggest that “sex talk allows partners to communicate desires and preferences to each other, to coordinate meanings for sexual behaviors, and to negotiate a dyadic sexual script.” Through communicating about sex, partners can develop a sense of meaning for their sexual relationship and negotiate how sex fits into the relationship (Cupach & Metts, 1991).

Several studies have shown a positive correlation between communicating with one's partner about sex and sexual satisfaction, especially for women. Specifically, Hurlbert (1991), suggests that “feeling incapable of communicating sexual desires has been found to be a common attribute related to anorgasmia.” Hurlbert further states that

feeling incapable of communicating sexual desires may be caused by impaired communication between the couple. The following studies specifically explore the positive correlation between these two factors.

Research that has looked at both men's and women's communication within the sexual relationship has been studied as it relates to sexual satisfaction in the marital dyad. Cupach and Comstock (1990) examined the relationship between sexual communication satisfaction, sexual satisfaction, and marital adjustment among a random sample of 402 married students enrolled at a large public university. Participants' average length of marriage was 10 years. Participants were given questionnaire packets containing the Dyadic Adjustment Scale (Spanier, 1976) assessing the quality of marital relationships, the Index of Sexual Satisfaction (Hudson, 1981) assessing the perceived quality of the sexual relationship with one's partner, and the Sexual Communication Satisfaction Scale (Wheless et al., 1984) designed to assess satisfaction with communication about sexual behavior, communication about what sexual behavior is satisfying, satisfaction derived from what is communicated by certain sexual behaviors, and willingness to communicate about sex with one's partner.

Cupach and Comstock hypothesized that (1) sexual communication satisfaction is significantly and positively related to sexual satisfaction, (2) sexual communication satisfaction is significantly and positively related to marital adjustment, and (3) communication and marital adjustment are important to understanding sexual satisfaction. Findings suggest that, as hypothesized, sexual communication satisfaction and sexual satisfaction for both men and women were positively correlated and shared 59% of the variance. Sexual communication satisfaction also was related positively to

marital adjustment, as hypothesized. To explore the third hypothesis, partial correlations were examined. The first-order partial correlation between sexual satisfaction and marital adjustment, controlling for sexual satisfaction communication was .49. The correlation between sexual communication satisfaction and marital adjustment was almost zero after controlling for sexual satisfaction. These findings support the third hypothesis, meaning that sexual communication is an important factor to examine when studying marital adjustment and sexual satisfaction. Implications for these findings are that perhaps sexual communication satisfaction increases sexual satisfaction and sexual satisfaction contributes to marital adjustment, thus suggesting a reciprocal relationship between marital satisfaction and sexual satisfaction. In sum, there seems to be a relationship among sexual communication, marital adjustment, and sexual satisfaction. Thus, when studying and predicting sexual satisfaction, it is important to examine sexual communication.

Purnine and Carey (1997) conducted a study with a predominantly Caucasian sample of 63 heterosexual married couples and 13 heterosexual cohabiting couples assessing the association between couple understanding and agreement and sexual satisfaction. Couples had an average of 2 children and an education of two years post-high school. Couples were given several measures including the Index of Sexual Satisfaction (Hudson, Harrison, & Crosscup, 1981); the Inventory of Dyadic Heterosexual Preferences (Purnine, Carey, & Jorgensen, 1996); the Center for Epidemiological Studies Depression Scale (Radloff, 1977); the Dyadic Adjustment Scale (Spanier, 1976); and the Social Desirability Scale (Crowne & Marlowe, 1960). Sexual agreement was operationalized as matching sexual scripts, meaning that both partners

conceptualize their role in their sexual relationship similarly. It is assumed that if both partners prefer the same sexual behaviors, it is more likely that sexual interactions will occur according to what both partners find acceptable and desirable. Also, sexual interactions that both partners find satisfying may reinforce specific sexual behaviors, subsequently resulting in the interaction being preferred by both partners. Results suggest that, for both men and women, sexual satisfaction is associated with couple agreement and men's understanding of women's sexual preferences. Women's understanding of men's sexual preferences was not significantly correlated with men's satisfaction, even though it was related to women's own satisfaction. Specifically, agreement on sexual practices was negatively correlated with women's sexual dissatisfaction, $r = -.46$. This means that there was a positive relationship between women's sexual satisfaction and couple agreement on sexual practices. Also, for women, men's understanding of women's sexual preferences was negatively correlated with women's sexual dissatisfaction, $r = -.43$. In other words, men's and women's sexual satisfaction was positively related to men's understanding of women's sexual preferences.

To further understand sexual satisfaction, the researchers created a variable pool based on previous research that suggests sexual satisfaction is related to sexual difficulties, relationship adjustment, and the presence of children. By including these variables in the analyses, the researchers were able to determine a majority of the variance in women's sexual satisfaction. Sixty-three percent of women's sexual satisfaction was accounted for by high levels of men's understanding of women's

preferences, women's dyadic adjustment, and women's preferences toward romantic foreplay. The researchers suggest that understanding may be important because it facilitates a spouse's ability to satisfy his or her partner.

MacNeil and Byers (1997) examined the relationship between sexual problems, communication, and sexual satisfaction. A Canadian sample of 34 heterosexual men and 53 heterosexual women who had been in a relationship for an average of 13 years were given questionnaire packets concerning relationship satisfaction, general communication, sexual satisfaction, sexual concerns, and sexual self-disclosure. Correlations were found between both non-sexual communication and sexual satisfaction, and sexual self-disclosure and sexual satisfaction. In this study, sexual self-disclosure was defined as preferences with regard to specific sexual activities, preferences for the same activities as one's partner, and the extent of self-disclosure concerning sexual problems. Better communication and greater self-disclosure were associated with reports of greater sexual satisfaction for men and women. Furthermore, both non-sexual communication and sexual self-disclosure were uniquely related to sexual satisfaction. That is, the more the men and women in this study communicated in general and the more they self-disclosed sexually, the more likely they were to report sexual satisfaction.

In summary, both men's and women's communication about sexual matters appears to be positively correlated with their respective sexual satisfaction within their marital relationship. On the other hand, the level of sexual disagreement between spouses corresponds to the couple's level of sexual dissatisfaction. Given the notion that communication takes place among two people and that a sexual relationship within marriage consists of the husband and wife, it is important to examine both husband's and

wive's assessments of communication about their sexual relationship. In the dataset employed in this study, measures of sexual communication were limited to husband's and wive's reports of the frequency of sexual disagreements. As such, this study will specifically examine the relationship between sexual disagreement and sexual satisfaction.

Frequency of sexual activity for men and women

Another aspect of the couple's sexual relationship that is believed to be associated with sexual satisfaction within marriage is frequency of sexual activity. Many of the studies that have examined the link between sexual satisfaction and marital satisfaction also studied the role of sexual activity in promoting sexual satisfaction. Perlman and Abramson (1982) selected nine variables for investigation as potential correlates of sexual satisfaction. Measures used in this study were the Marlowe-Crowne Approval Motive Scale (Crowne & Marlowe, 1964), the Jemal-LoPiccolo Sexual Defensiveness Scale (Jemal & LoPiccolo, 1982), the Index of Sexual Satisfaction (Hudson, Crosscup, & Harrison, 1978), the Mosher Sex Guilt Scale (Mosher, 1966), the Knowledge of Sexual Functioning subscale of the Derogatis Sexual Functioning Inventory (Derogatis, 1975), the Rahe Recent Life Changes Questionnaire (Rahe, 1974), the Marks and Sartoris Semantic Differential Scale (Marks & Sartoris, 1968), the Bentler Heterosexual Scales (Bentler, 1968), and the Spanier Dyadic Adjustment Scale (Spanier, 1976). Using simple correlations and factor analysis, results indicated that the frequency of sex was correlated with sexual satisfaction.

A study using non-U.S. couples examined predictor variables related to sexual satisfaction (Renaud, Byers, & Pan; 1997). A Chinese sample of 170 men and 191

women ranging in age from 21 to 77 with a range of length of marriage from 1 to 42 years were given a mailed questionnaire packet containing measures of relational and sexual satisfaction. Zero-order correlations were used to examine the relationships between both relationship satisfaction and sexual satisfaction and several factors associated with the sexual relationship. On a six-point scale ranging from “rarely or never” to “once a day or more,” participants reported moderate frequencies of physical affection and sexual behavior. Sixteen percent of participants reported that they rarely or never engaged in physical affection while thirteen percent reported they rarely or never engaged in sex. Nine percent, however, reported that they engage in physically affectionate behavior and 1.4% reported they engaged in sexual acts once a day or more. The average frequency of affectionate behavior and sexual behavior corresponded to a rating between “2 or 3 times a month and “once or twice a week.” The correlation between frequency of sexual activity and men’s sexual satisfaction was .47 and for women was .57. As hypothesized, results suggest that for men and women, greater sexual satisfaction is associated with greater frequency of affectionate and sexual behavior.

Finally, Young and Luquis (1998), using a sample of 797 married couples, created a five variable model of sexual satisfaction based on existing research. Zero order correlations revealed that sexual satisfaction correlated significantly with frequency of sexual activity ($r = .37$) although the unique variance of frequency of sexual activity in explaining sexual satisfaction was not determined. These findings imply that participants who indicated a higher frequency of sexual activity tended to have higher levels of sexual satisfaction. Almost 90% of men and women in the sample who had sex three or more

times a week reported satisfaction with their sex lives, while less than half of the sample expressed satisfaction when their frequency of sex was between once a week and once a month. Only one-third of the sample with frequency rates of once per month or less reported satisfaction. These findings suggest that frequency of sex plays an important role in sexual satisfaction within marriage.

In addition to the studies that included both husbands and wives, four studies have focused exclusively on female participants. In the first study, Pinney, Gerrard, and Denney (1987) conducted a study examining the correlates of women's sexual satisfaction. In this study, frequency of sexual intercourse was among the variables selected as a possible predictor of sexual satisfaction. A Caucasian sample of 275 single, college-aged women completed a questionnaire designed to obtain information about sexual activity. The frequency of intercourse item was measured by one question asking the women to estimate the number of times per month she currently has sexual intercourse. An examination of the standardized regression coefficient associated with each predictor variable revealed that frequency of sexual intercourse was the fourth most important variable in predicting sexual satisfaction variance, behind relationship commitment, orgasm consistency, and contraceptive effectiveness. Therefore, frequency of sexual activity was again supported as a correlate of sexual satisfaction.

Second, in a study designed to understand married women's sexual satisfaction using a sample of 161 married women, Hurlbert, Apt, and Rabehl (1993) gave participants an information checklist measuring sexual experience, frequency of orgasms, and sexual activity satisfaction while also asking participants to note each time they

participated in sexual activity with their spouse as a measure of frequency of sexual activity. The results of the study suggest that greater sexual satisfaction is in fact associated with higher frequency of sexual activity. Though frequency of sexual activity was correlated in this study with sexual satisfaction, a step-wise multiple regression analysis to determine which variables were predictive of sexual satisfaction over and above the other variables studied revealed that frequency of sexual activity did not add to the prediction of sexual satisfaction over and above each of the other eight variables including number of orgasms, sexual desire, orgasm consistency, relationship closeness, sexual assertiveness, erotophobia-erotophilia, and sexual excitability.

In sum, frequency of sexual activity was a correlate of sexual satisfaction in this study, but relationship variables and personality variables such as relationship closeness, sexual assertiveness, and erotophobia-erotophilia explained the most variance in women's sexual satisfaction.

Third, Young, Denny, Young, and Luquis (2000), in examining sexual satisfaction among a sample of 641 married women, measured frequency of sexual activity. The purpose of this study was to determine how a set of predictor variables combined to account for the variation in married women's sexual satisfaction. A 70-item questionnaire concerning participants' sexual satisfaction which included frequency of sexual activity was administered to participants. The variable of frequency of sexual activity was measured by the question "how often do you and your spouse engage in sexual activity?" and participants were directed to "indicate the approximate number of occasions per month in which you and your spouse engage in sexual activity." Results indicated that a model of nine predictor variables combined to account for 65% of the

variance of married women's sexual satisfaction, of which frequency of sexual activity was included. The authors failed to determine unique variance for each predictor variable, so it is unknown how much the variable of frequency of sexual activity contributed to the variance in married women's sexual satisfaction in this study.

The last of the four studies to examine the association among frequency of sexual activity and sexual satisfaction studied a sample of 1800 married women of reproductive age from Shanghai, China (Zhou, 1993). Participants answered questions regarding the sexual states and feelings of themselves and their husbands. Ninety percent of the women were age 30-49 and 58% had been married 6 to 15 years. Fifty percent of the women had finished ninth grade, while 32% completed high school and 15% had college degrees. Stepwise logistic regression analysis revealed that the average frequency of coitus was reported to be once a week by 45% of participants, twice a week by 20.5%, and three times a week by 17.8%. Chi square tests suggest that a high frequency of coitus is usually associated with a high degree of satisfaction among married women.

Taken together, these results suggest that sexual frequency is associated with higher reports of sexual satisfaction for women. Communication regarding sexual matters also appears to be related to the sexual relationship within marriage. As such, frequency of sexual activity and communication regarding sexual matters are important factors to examine when studying women's sexual satisfaction.

Depression

Frohlich and Meston (2002) studied the link between young women who report depressive symptoms and several aspects of sexual functioning. Participants were drawn from a large database of undergraduate psychology students. Participants filled out the

Beck Depression Inventory (BDI) (Beck & Beamesderfer, 1974) and those who scored a 20 or greater were classified as the depressive symptom group (n = 47). Those who scored less than 3 on the BDI were used as the control group (n = 47). Participants were selected to participate only if they indicated being involved in a sexually active relationship. The average age of each participant was 19, with an age range of 18 to 25. Participants completed the BDI, and selected sections of the Brief Index of Sexual Functioning for Women (BISF-W) (Taylor, Rosen, & Leiblum, 1994) including sexual desire, sexual arousal, orgasm, sexual pain, sexual satisfaction, and sexual pleasure. Sexual desire was assessed with the items, “How frequently have you felt a desire to engage in masturbation?” and “How frequently have you felt the desire to engage in kissing? Foreplay? Vaginal penetration?” Sexual arousal was assessed asking “How frequently have you experienced a lack of vaginal lubrication?” Orgasm functioning was assessed by asking “How frequently have you experienced difficulty reaching orgasm?” Sexual pain was assessed by asking “How frequently have you experienced painful penetration or intercourse?” Sexual satisfaction was assessed by asking “How satisfied have you been with your sexual relationship with your partner?” Finally, sexual pleasure was assessed by asking “Have you felt pleasure from any forms of sexual experience?”

Using a MANOVA, results suggested a significant difference between the two groups of women. Regarding sexual drive, depressed women engaged in more masturbation than nondepressed women, however, no group differences were found for women desiring sex with their partner. Women who reported being more depressed reported more sexual problems than nondepressed women. Specifically, depressed women reported more problems in the area of vaginal lubrication, orgasm difficulties,

and pain. Women in the depressed group also reported less satisfaction with their sexual relationships and less pleasure during sexual activity than did the control group.

These findings are not surprising given that depression is associated with a loss of interest in previously-enjoyed activities. Those who report that they suffer from depression also are likely to suffer from an inability to experience pleasure in normally pleasurable acts. It is possible that those who suffer from depression are less likely to seek sexual pleasure. It is also possible that when those who suffer from depression are involved in sexual activity, they are less likely to feel pleasure, which may likely contribute to their lack of sexual satisfaction.

A similar study conducted by Cyranowski et al. (2004) examined lifetime depression history in women and women's sexual functioning. Participants included 922 women ages 42-52 who were participants in the Study of Women's Health Across the Nation (SWAN) (Sowers et al., 2000) The women in the study were more likely to be African American, employed, better educated, and healthier. Participants responded to self-report questions about their sexual behavior, sexual desire, and sexual satisfaction over the past six months. Women were divided into three groups based on lifetime depression: (1) no history of major depressive disorder (MDD), (2) single episode of MDD, (3) recurrent MDD operationalized as two or more lifetime episodes. Of the participants, 68% had no history of MDD, 15% had a single episode of MDD, and 16.6% had recurrent MDD. All participants were asked whether they had engaged in sexual activities with a partner in the past 6 months. Those who responded yes rated the frequency with which they engaged in specific partnered sexual activities including kissing or hugging, sexual touching or caressing, and sexual intercourse. All participants

were asked to rate their frequency of sexual desire on a 5-point Likert scale in response to the question, “During the past six months how often have you felt a desire to engage in any form of sexual activity, either alone or with a partner?” Sexual arousal was assessed by asking, “How often do you feel aroused during sexual activity?” Physical pleasure was assessed by asking, “How physically pleasurable was your relationship with your main partner?” Finally, emotional satisfaction was assessed by asking, “How emotionally satisfying was your relationship with your main partner?” None of the depression history groups differed regarding age, education, income, menopausal status, or current reports of relationship happiness.

Results revealed that 80% of all participants reported engaging in sexual activity with their partner. Furthermore, no group differences were found regarding reported frequency of sexual desire. Groups did differ, however, in their reports of sexual arousal, reports of physical pleasure, and emotional satisfaction experienced with their main partner relationship. Specifically, women in the recurrent MDD group reported the least frequent arousal and the lowest levels of physical pleasure and emotional satisfaction among the three groups. Thus, sexual satisfaction seems to be negatively related to depression, however, we do not know the pathway through which depression and sexual satisfaction are related.

Though there are few studies that measure the link between depression and sexual satisfaction, there are a number of studies that examine depression and marital satisfaction. It is likely, however, that marital satisfaction mediates this relationship because there is a clear link between depression and marital quality. According to Peggy Papp (2003), depression and marital conflict go hand in hand. There is a reciprocal

relationship between marital distress and clinical depression in that marital conflict can lead to an increase in negative behaviors that, in turn, can precipitate depression.

Depression, particularly for women, can stem from relational troubles mainly because women are socialized to value their sense of self in relation to emotional connection with others. When women have difficulty with their interpersonal relationships, depression is a likely result.

Fincham, Beach, Harold, and Osborne (1997) studied the relationship between marital satisfaction and depressive symptoms among a sample of 150 recently married couples. The couples had been married from three to eight months, were 91% Caucasian, 58% Protestant, and averaged 15 years of formal education. Participants were given the Marital Adjustment Test (MAT; Locke & Wallace, 1959) and the Beck Depression Inventory (BDI; Beck & Beamesderfer, 1974). Correlations revealed that marital satisfaction and depressive symptoms were related. The authors suggested an explanation for these findings. Because women are often perceived as being more relationship oriented than men and may thus feel greater responsibility for resolving relationship conflicts, one might expect greater vulnerability to marital stressors for women than for men.

Whisman (2001), examining a cross-sectional and longitudinal analysis, conducted a meta-analysis that focused on the association between depression and marital dissatisfaction. In both cross-sectional and longitudinal studies, there were two distinct categories of depression: depressive symptoms found in community samples and diagnostic depression found in clinical samples. In the cross-sectional analysis among samples with depressive symptoms, results suggested that greater depression severity was

associated with greater marital dissatisfaction. The weighted mean effect size between depressive symptoms and marital satisfaction across 26 studies was $-.42$ for women, which is significantly different from zero. This correlation, according to Whisman, implies that 18% of the variance in wives' depressive symptoms is attributable to their level of marital dissatisfaction. In addition, because these correlations were gathered from a large number of participants (3,745 women) with a variety of demographic characteristics, and because results were obtained using many different measures of depressive symptoms and marital dissatisfaction, it can be said that these values are reliable estimates of the association between depressive symptoms and marital dissatisfaction.

In the cross-sectional analysis among samples with diagnostic depression, results suggested that the presence of diagnostic depression was associated with greater marital dissatisfaction. The mean effect size for the association between diagnostic depression and marital dissatisfaction falls in the large effect size range, giving the indication of a strong association. When converting the effect size to a correlation coefficient, r becomes $.66$, suggesting that an average of 44% of the variance in diagnostic depression could be accounted for by degree of marital dissatisfaction.

Longitudinal studies between depressive symptoms and marital dissatisfaction also have been conducted. Findings from the meta-analysis suggest that results from longitudinal studies between depressive symptoms and marital dissatisfaction have been mixed and inconclusive. Longitudinal studies between diagnostic depression and marital

dissatisfaction have produced more clear-cut results. Overall, findings suggested that it is likely that depression and marital dissatisfaction influence, and are influenced by, one another.

Riso et al. (2002) compared marital history and marital satisfaction in a sample of participants with chronic depression compared to those with nonchronic depression. Participants were drawn from a larger study (Riso, et al., in press at the time of publication). Sixty-one participants with chronic depression and 35 participants with nonchronic depression were included. Chronic depression was defined as a DSM-IV diagnosis of chronic major depressive disorder or dysthymic disorder while nonchronic depression was defined as a DSM-IV diagnosis of major depressive disorder with no history of chronicity (all episodes last less than two years duration and there is no history of dysthymic disorder). A control group was used who had never experienced a DSM-IV psychiatric disorder. Participants were given the Marital Adjustment Test (MAT; Locke & Wallace, 1959) and the Inventory of Depressive Symptomatology (IDS; Rush, et al. 1986).

Findings revealed that the chronically depressed group had a significantly lower mean marital satisfaction score compared to the nonchronic group (57.9 versus 85.4). Also, the chronically depressed group reported a significantly lower percentage of time “happy” in their marriage (38.5% versus 69.0%). The authors gave several explanations as to why the chronically depressed group reported poorer marital satisfaction compared to the nonchronically depressed group. First, it is possible that the chronicity of the depression slowly alienated the partners of the depressed individuals. Furthermore, the chronically depressed individual may likely engage in excessive reassurance seeking

from his or her partner. Excessive reassurance seeking, according to Riso et al. (2002) has been shown, over time, to erode the support network of those suffering from depression.

Davila, Karney, Hall, and Bradbury (2003) conducted a study to determine within-subject associations between depressive symptoms and marital quality over time. A sample of 164 newlywed couples obtained from marriage licenses filed in Los Angeles County had to fit the following eligibility criteria: spouses had to be in their first marriage, over 18 years old, have at least a 10th grade education, speak English, have no children, and have no immediate plans to move from the area. Couples were given the Marital Adjustment Test (Locke & Wallace, 1959) and the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) which provided 8 waves of data over 4 years of marriage. Correlations between depression scores and marital satisfaction scores were significant and negative at most waves for both spouses. This means that the higher one's depression scores, the lower one's marital satisfaction and vice versa. Using hierarchical linear modeling, results also suggest that associations between depressive symptoms and marital satisfaction were bidirectional. That is that depressive symptoms were as likely to predict changes in marital satisfaction as marital satisfaction was to predict changes in depressive symptoms. Therefore, it is not uncommon for couples to become caught in a cycle of depression and marital distress.

Uebelacker, Courtnage, and Whisman (2003) examined depression and marital dissatisfaction. A sample of 127 married couples (67 women and 60 men) met eligibility criteria in that they had to be married for more than one year and be younger than age 65. Ninety-one percent of the sample was Caucasian. Participants had been married an

average of 15.8 years. Couples were given the following measures: Beck Depression Inventory-Second Edition (Beck, Steer, & Brown, 1996), Quality of Marriage Index (Norton, 1983), Communication Patterns Questionnaire (Christensen, 1988; Christensen & Sullaway, 1984), and Silencing the Self Scale (Jack, 1991; Jack & Dill, 1992).

Correlations revealed that, for women only, marital dissatisfaction was significantly correlated with depression symptoms. In summary, it appears that depression and marital satisfaction are correlated and depression and sexual satisfaction are correlated, though we do not know the direct and indirect influences that depression has on marital and sexual satisfaction.

This review of literature has supported links among several factors that appear to be related to women's marital and sexual satisfaction. These factors are likely important in understanding women's sexual satisfaction, though the direct influences upon sexual satisfaction of factors such as intimacy, marital satisfaction, sexual disagreement, frequency of sexual activity, and depression are not known. The proposed model will test the direct and indirect influences of these factors upon women's sexual satisfaction in addition to supplying information about the unique contribution of each variable to women's sexual satisfaction.

III. METHODS

Participants

The data for this study come from the 1992-1994 five year follow-up from the National Survey of Families and Households (NSFH) wave 2 conducted by the Center of Demography and Ecology, the University of Wisconsin, Madison (Sweet, Bumpass, & Call, 1988). NSFH combines a national probability sample of households, and an oversample of households of the following specific family types: Black and Hispanic households with children and one parent/guardian absent, households with children who have a step-parent, households with children and both parents absent, and households with couples married less than six years. Spouses of the primary respondent were asked to complete a marital self-enumerated questionnaire.

For the purpose of this study, only married couples were considered in which primary respondents and their spouses completed the survey (n=4,080). Couples providing incomplete data for the relevant variables have been deleted from the analysis, resulting in a final sample of 3,884 couples. The majority of the participants were Caucasian (85%). The mean age for males was 44.2 with a mode of 36. Mean age for females was 42.73 years with a mode of 39. Participants had been married an average of 22 years, with a range in length of marriage from four to sixty-four years. Thirty-three percent of the men in the sample had completed high school, while another 18% had obtained some college education. Thirty-six percent of the women in the sample had

completed high school, while another 21% had obtained some college education. The average income before taxes that men reported was \$ 37,122, while the average income women reported was \$20, 304. It is important to note that about a third of the sample reported an amount for income before taxes. Forty-two percent of the sample reported having three or fewer people in their home under the age of eighteen. A little over half of the sample answered this question. T-tests were used to compare the original married sample (n = 4,080) with the analysis sample (n = 3,884). Results suggest that the analysis sample was younger, slightly better educated, and reported more income before taxes.

Because there was insufficient cell size for race in some categories, race was collapsed into three categories of White, Black, and Other. A chi-square test indicated that the husbands in the analysis sample did not differ by race from the overall sample ($\chi^2 = 1.558$, $df = 2$, $p = .459$). The chi-square test revealed that women did, however, differ by race in the analysis sample versus the overall sample ($\chi^2 = 7.855$, $df = 2$, $p = .020$). The analysis sample for women was 84.8% White, 8.6% Black, and 6.6% Other, respectively as compared to 73.9% White, 14.1% Black, and 12% Other for the overall sample.

Procedure

Respondents aged 19 or older were randomly selected to participate as the primary respondent in an interview that assessed many issues. Data collection consisted of three parts: (1) an in-person interview of the primary respondent, (2) a self-administered questionnaire for the primary respondent, and (3) a self-administered questionnaire of the respondents' spouse or cohabiting partner.

Measures

Dependent variable

Sexual satisfaction. The dependent variable in this study was married women's sexual satisfaction. This variable was assessed using the following items selected from the 1992 second wave of data from the self-enumerated questionnaire: The first question is "Overall, how satisfied are you with your sex life?" Choices ranged from 1 being very dissatisfied to 7 being very satisfied. The second question is "How happy are you with your sexual relationship?" Choices ranged from 1 being very unhappy to 7 being very happy. The two items were summed together with larger scores indicating higher levels of sexual satisfaction. The correlation between the two items was .76.

Independent variables

Marital Quality

Intimacy. Respondents' intimacy and closeness with their partners was measured using four questions which were summed together. The items are: "How happy are you with the following aspects of your marriage: The understanding you receive from your spouse? The love and affection you get from your spouse? And the amount of time you spend with your spouse?" Choices ranged from 1 being very unhappy to 7 being very happy. "During the past month, about how often did you and your husband/wife spend time alone with each other, talking, or sharing an activity?" The choices were "(1) never, (2) about once a month, (3) two or three times a month, (4) about once a week, (5) two or three times a week, or (6) almost every day." Responses ranged from 1 to 6. Because the items had different response ranges, we multiplied the 7-point scale by 6 and

the 6-point scale by 7 to create an intimacy scale ranging from 6-42, with higher scores indicating higher levels of intimacy. The alpha reliability for this measure was .80.

Marital satisfaction. Marital satisfaction was measured using the following three questions: “Taking all things together, how would you describe your marriage?” Choices ranged from very unhappy at 1 to very happy at 7. The second question was reverse scored: “It is always difficult to predict what will happen in a marriage, but realistically, what do you think the chances are that you and your husband/wife will eventually separate or divorce?” Choices ranged from (1) very low to (5) very high. Because the items had different response ranges, we multiplied the response ranges together to create a marital satisfaction scale from 5-35, with higher scores indicating higher levels of marital satisfaction. Finally, the third question for the marital satisfaction scale was dichotomous: “During the past year, have you ever thought that your marriage might be in trouble?” This question also was reverse scored and choices were yes (5) and no (35) to be consistent with the overall marital satisfaction scale which ranged from 5 to 35. Cronbach’s alpha for the marital satisfaction scale was .74.

Couple’s Sexual Relationship

Sexual disagreement. The specific question that taps sexual disagreement is: “How often, if at all, in the past year have you had open disagreements about sex? Never (1), less than once a month (2), several times a month (3), about once a week (4), several times a week (5), or almost every day (6).”

Frequency of sexual activity. Regarding frequency of sexual activity, the respondent is instructed to give a numerical answer to the question “About how often did you and your husband/wife have sex during the past month?” Responses ranged from zero to seventy times per month.

Individual Factors

Depression. Questions from The Center for Epidemiologic Studies-Depression Scale (CES-DS) were used to assess depression (Radloff, 1977). The CES-DS was designed for use in general population surveys, and is therefore a short, structured, self-report measure. Participants were asked to respond to 15 questions about how they felt or behaved during the past week. The questions were: “Next is a list of the ways you might have felt or behaved during the past week. On how many days during the past week did you feel bothered by things that usually don’t bother you? Not feel like eating; your appetite was poor? Feel that you could not shake off the blues even with help from your family or friends? Have trouble keeping your mind on what you were doing? Feel depressed? Feel that everything you did was an effort? Feel fearful? Sleep restlessly? Talk less than usual? Feel lonely? Feel sad? Feel you could not get going? Feel irritable, or likely to fight or argue? Feel like telling someone off? Feel angry or hostile for several hours at a time? Choices ranged from zero to seven for each question, with a total range on the depression scale from zero to 105, with larger numbers indicating higher levels of depression. The alpha reliability for the depression items was .94.

Transformations of data

Preliminary analyses yielded skewed distributions of the independent and dependent variables, so transformations were performed based on Tabachnick and Fidell (1996) to allow for more normal distributions and for the results to be more generalizable to the population. When a distribution is normal, the value of skewness is zero. Positive skewness suggests there is a pileup of cases to the left and the right tail is too long. With negative skewness, there is a pileup of cases to the right and the left tail is too long.

The following variables were substantially negatively skewed before transformation: marital satisfaction, and the two dependent measures of sexual satisfaction. A transformation designed to correct a substantial negative skew (new variable = $\log_{10}(\text{constant}-x)$) yielded the most normal distribution with a skew value of .249 for marital satisfaction, .038 for the first measure of sexual satisfaction, and .135 for the second measure of sexual satisfaction.

The following variables were moderately negatively skewed before transformations: intimacy, and men's and women's sexual disagreement. A transformation for a moderate negative skew (new variable = square root (constant-x)) yielded the most normal distribution with a skew value of .050 for intimacy, for wife's sexual disagreement .492, and .319 for husband's sexual disagreement.

The following variables were moderately positively skewed before transformation: women's depression, and men's and women's sexual frequency. A transformation for a moderate positive skew (new variable = square root (x)) yielded the most normal distribution with a skew value of .531 for women's depression, .247 for men's sexual frequency and .208 for women's sexual frequency.

IV. RESULTS

The zero-order correlations among the five constructs (marital quality, couple's reports of frequency of sex, couple's reports of sexual disagreement, women's reports of depression, and women's sexual satisfaction) are presented in Table 1. Structural equation modeling (SEM) was employed to test the fit of the hypothetical model (shown in Figure 1) to the data using AMOS. SEM allows for a comparison of the hypothesized model with the data, examining relationships among variables simultaneously. Circles in the model represent latent variables, and rectangles represent measured or observed variables. Absence of a line connecting variables implies no hypothesized direct effect. Intimacy and marital satisfaction serve as indicators of marital quality. Wive's and husband's reports of sexual frequency and sexual disagreement serve as indicators of couple's sexual frequency and sexual disagreement, respectively. Two questions that assess one's level of sexual satisfaction serve as indicators of wive's sexual satisfaction.

The test of the full model revealed a chi-square of 283.36 with 21 d.f. ($p < .001$). While this finding may suggest a bad fit of the model to the data, Joreskog and Sorbom (1989) suggest that, rather than regarding chi-square as a test statistic, it should be used as a goodness-of-fit measure such that large chi-square values imply bad fit and small chi-square values imply good fit. According to this criterion, the model does not fit the data well. However, other measures of the model's goodness-of-fit, in particular the goodness-of-fit index and root mean square residual provide more positive evidence of the fit of the model. The goodness-of-fit index was .995 which suggests that more than

99% of the covariance between the five constructs can be accounted for by the model. The root mean square residual was .057. Taken together, these findings indicate a moderate fit of the model to the data.

An examination of the modification indices revealed a large modification index (46.4) for the correlation between the residuals for women's perceived levels of intimacy and women's response to the question "Overall, how satisfied are you with your sex life?" This path suggests that there are other factors not examined in the model that influence both intimacy and women's response to the question "Overall, how satisfied are you with your sex life?" Therefore, something outside the model is influencing both of these factors. It could be that stress from work, children, or illness brings a couple together and promotes intimacy, but detracts from sexual satisfaction. Freeing this path resulted in a chi-square value of 225.12 with 20 d.f. ($p < .001$). The goodness-of-fit index increased minimally (.996) while the root mean square residual decreased (.051). Thus, an improvement in the fit of the model to the data was made, but the chi-square value remained large relative to the degrees of freedom.

Modification indices for this model revealed that an improvement in fit could be made by freeing the paths between the residuals for husband's perceived levels of sexual frequency and husband's perceived levels of sexual disagreement. This finding suggests that there are factors outside the model influencing husband's levels of sexual frequency and sexual disagreement. It is possible for example, that the overall quality of the sexual

relationship may impact both sexual frequency and sexual disagreement among husbands. Freeing this second path resulted in a chi-square value of 211.66 with 19 d.f. ($p < .001$). The goodness-of-fit index, again, slightly increased (.997) while the root mean square residual stayed the same (.051).

Finally, modification indices suggested that an improvement in fit could be made by allowing the residuals for couples' sexual frequency and couples' sexual disagreement to correlate (Figure 2). Again, this pathway means that there are factors outside of the model that are likely influencing couples' reports of sexual frequency and couples' reports of sexual disagreement. It could be that couples' attitudes about sex are influencing their frequency of sexual activity and sexual disagreements. For example, some couples may have liberal attitudes toward sex and sexual activity and may engage in sexual activity frequently, but disagree about reasons for engaging in sex with their partner. When freeing this path, a chi-square value of 174.61 was produced with 18 d.f. ($p < .001$). The goodness-of-fit index remained the same (.997) while the root mean square residual decreased (.047). Because these indicators suggest a good fit of the model to the data and because changing a model based on the model output compromises the ability to test the model on the dataset, no further modifications were made.

To determine indirect effects, pathways were multiplied by each other to determine a path coefficient. The path coefficient between depression and marital quality was -.43 and the path coefficient between marital quality and sexual satisfaction was .64. Multiplying these two numbers together yields a path coefficient of .28. This means, as hypothesized, that the relationship between depression and sexual satisfaction was indirectly related through marital quality.

When testing the second indirect hypothesis, that marital quality would be indirectly related to sexual satisfaction through sexual frequency and sexual disagreement, the same steps were used as in the first indirect hypothesis. The path coefficient between marital quality and sexual frequency was .16 and the path coefficient between sexual frequency and sexual satisfaction was .40, which yields, when multiplied together, a path coefficient of .06. The path coefficient between marital quality and sexual disagreement was -.55 and the path coefficient between sexual disagreement and sexual satisfaction was -.13, which yields a path coefficient of .072. Thus, as hypothesized, indirect effects of marital quality on sexual satisfaction through sexual frequency and sexual disagreement also were found. The indirect effects of marital quality on sexual satisfaction through sexual frequency and sexual disagreement were not as strong as the indirect effect between depression and sexual satisfaction through marital quality.

The *R*-square for the dependent variable, women's sexual satisfaction, in this model was .72., which indicates that 72% of the variability in women's sexual satisfaction was explained by women's marital quality, couple's reports of sexual frequency, couple's reports of sexual disagreement, and women's depression. Women's depression predicted 18% of the variability in women's marital quality ($R^2 = .18$) and women's marital quality predicted 2% of the variability in couple's reports of sexual frequency ($R^2 = .02$). Finally, women's marital quality predicted 28% of the variability in couple's reports of sexual disagreement ($R^2 = .28$).

TABLE 1

Correlation matrix, means and SDs for variables in model

Variables	1	2	3	4	5	6	7	8	9
1. Marital satisfaction	1.00								
2. Intimacy	.621**	1.00							
3. Wive's Depression	-.334**	-.321**	1.00						
4. Wive's sexual disagreement	-.307**	-.318**	.252**	1.00					
5. Husband's sexual disagreement	-.212**	-.223**	.119**	.373**	1.00				
6. Wive's sexual frequency	.090**	.148**	-.058**	.014	.026	1.00			
7. Husband's sexual frequency	.057**	.088**	-.014	.032*	-.020	.738**	1.00		
8. Sexual satisfaction measure 1	.412**	.455**	-.267**	-.267**	-.169**	.410**	.328**	1.00	
9. Sexual satisfaction measure 2	.495**	.591**	-.224**	-.312**	-.199**	.421**	.342**	.759**	1.00
Mean	29.5	32.2	16.9	1.8	1.9	5.9	5.7	5.4	5.3
SD	7.0	7.7	17.5	1.1	1.1	6.0	5.8	1.5	1.7

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

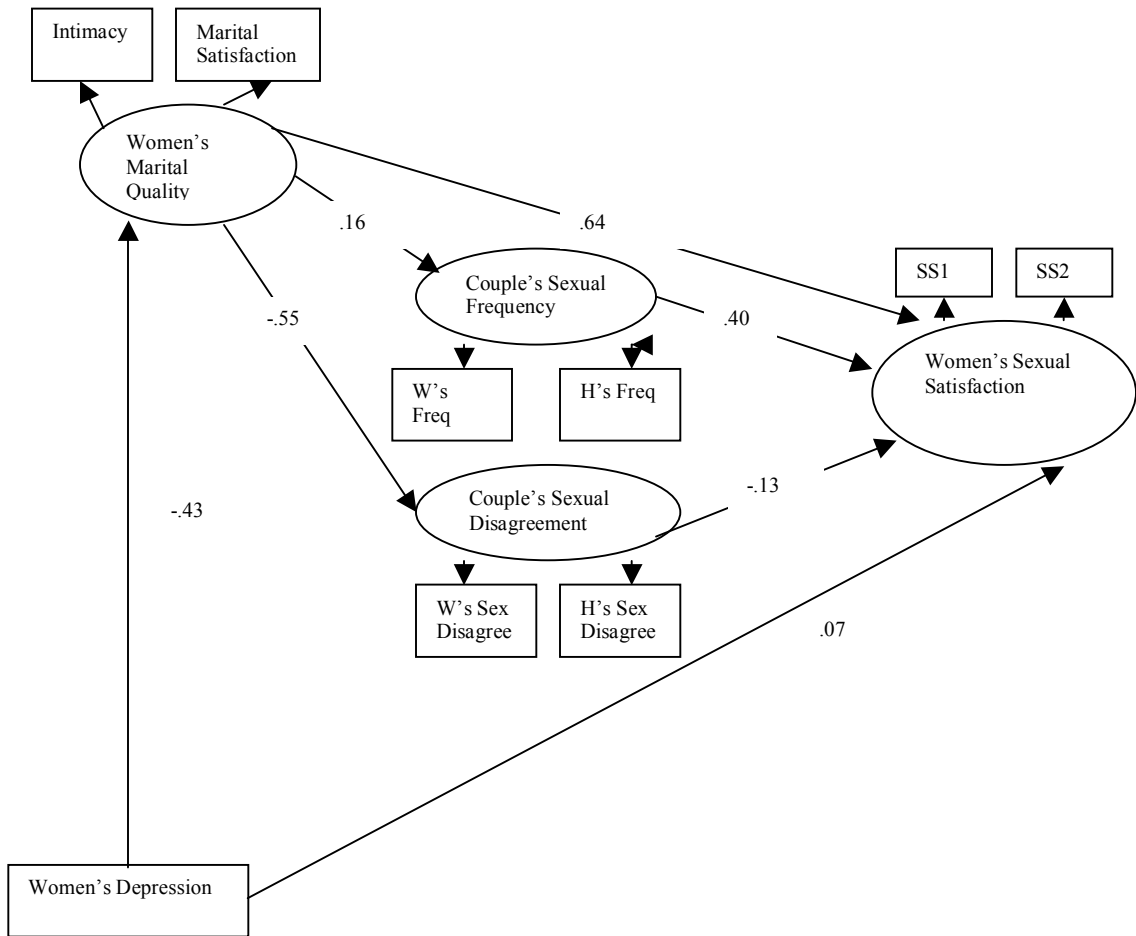


Figure 2.

Model of Married Women's Sexual Satisfaction

Table 2 *Standardized Regression Weights and Significance Levels for Model in Figure 2*

<i>Parameter Estimate</i>	<i>Standardized Regression Weight</i>	<i>P</i>
<i>Measurement Model</i>		
Women's Marital Quality to Intimacy	.833	.001
Women's Marital Quality to Marital Satisfaction	.735	.001
Couples' Sexual Frequency to Wives' Reports of Frequency	.936	.001
Couples' Sexual Frequency to Husbands' Reports of Frequency	.789	.001
Couples' Sexual Disagreement to Wives' Reports of Disagreements	.744	.001
Couples' Sexual Disagreement to Husbands' Reports of Disagreement	.504	.001
Sexual Satisfaction to Sexual Satisfaction 1	.826	
Sexual Satisfaction to Sexual Satisfaction 2	.921	
<i>Structural Model</i>		
Women's Depression to Women's Sexual Satisfaction	.068	.001
Women's Depression to Marital Quality	-.427	.001
Marital Quality to Women's Sexual Satisfaction	.644	.001
Marital Quality to Couples' Sexual Frequency	.162	.001
Marital Quality to Couples' Sexual Disagreement	-.545	.001
Couples' Sexual Frequency to Women's Sexual Satisfaction	.400	.001
Couples' Sexual Disagreement to Women's Sexual Satisfaction	-.127	.001
<i>Correlated Residuals</i>		
Intimacy to Sexual Satisfaction 1	-.208	.001
Husband's Sexual Frequency to Husband's Sexual Disagreement	-.098	.001
Couples' Sexual Frequency to Couples' Sexual Disagreement	.147	.001

Note: $\chi^2(18) = 174.608$, $p < .001$; CFI = .998; NFI = .998; RFI = .994; RMSEA = .047

V. DISCUSSION

The purpose of this study was to examine factors related to married women's sexual satisfaction and to explore how these factors work together to create a better understanding of married women's sexual satisfaction. The analyses revealed that, together, women's marital quality, couple's reports of sexual frequency, couple's reports of sexual disagreement, and women's depression accounted for slightly more than 70% of the variability in women's sexual satisfaction. Marital quality was most clearly associated with sexual satisfaction, followed by sexual frequency, sexual disagreement, and women's depression.

Not surprisingly, marital quality and sexual satisfaction were highly correlated. That is to say, when women were highly satisfied in their marriage, they also reported high satisfaction in their sexual relationships. This finding is consistent with the literature that reports a strong relationship between women's marital and sexual satisfaction (Darling, Davidson, & Cox, 1991; Hurlbert, et al., 1993; Lawrance & Byers, 1995; Newcomb & Bentler, 1983; Perlman & Abramson, 1982; Rosenzweig & Dailey, 1989; Schenk, Pfrang, & Rausche, 1983). This study, however, is the only research to utilize a large, national sample with couple data. Thus, this study replicated the existing findings that relationship satisfaction and sexual satisfaction are strongly related, although this study confirmed it on a larger scale.

Also, sexual frequency was correlated with women's sexual satisfaction. This finding is also consistent with existing literature of which only one included a U.S. sample of couples (Haavio-Mannila & Kontula, 1997; Hurlbert, Apt, & Rabehl, 1993; Perlman & Abramson, 1982; Pinney, Gerard, & Denney, 1987; Renaud, Byers, & Pan, 1997; Young, Denny, Young, & Luquis, 2000; Young & Luquis, 1998; Zhou, 1993).

Also consistent with the literature, frequency of sexual intercourse was associated with marital satisfaction (Call, Sprecher, & Schwartz, 1995; Donnelly, 1993; Renaud, Byers, & Pan, 1997). However, only 2% of the variance in sexual frequency was accounted for by marital quality. None of the other studies reported levels of shared variance between sexual frequency and marital satisfaction. This finding suggests that marital quality tells us little about why levels of sexual frequency vary. Perhaps those who are satisfied within their relationships do not feel the need to engage in frequent sex or couples may have negotiated a level of sexual frequency within their marriage that is not closely tied to the overall quality of their marital relationship. Finally, it may be that marital quality is more closely tied to the overall quality of the sexual relationship, rather than it is to a specific aspect of the sexual relationship.

This finding is also important because we were able to assess the agreement between couple's reports of sexual frequency. Results suggest that couples are mostly in agreement when reporting perceived levels of sexual frequency ($r = .74$), although there appears to be some variability in husband's and wife's reports of the frequency with which they have engaged in sexual activity. This variability, however, may be due, in part, to having been asked to recall sexual activity for an entire month, rather than a shorter span of time, such as a week.

From the model, we know that couples who reported high sexual frequency also reported being satisfied with their sex lives. This finding suggests that when working with women to increase their sexual satisfaction, clinicians should inquire about the amount of sexual activity that is occurring within their relationship. When women report low levels of sexual satisfaction, it is important that one inquire about the quality of the relationship. That is, it may be that increasing the quality of one's marriage will increase a woman's sexual frequency, which may, in turn, increase the couple's level of sexual satisfaction.

Also as hypothesized, the more disagreements couples had about sex the lower the reported level of women's sexual satisfaction. This finding also is supported by existing research (Banmen & Vogel, 1985; Byers & Demmons, 1999; Cupach & Comstock, 1990; MacNeil & Byers, 1997; Purnine & Carey, 1997). When both husband and wife were asked about the level of sexual disagreement within their relationship, they did not answer in a similar manner ($r = .39$). One possible explanation for this low association is that 50% of men and women in the sample indicated never having open disagreements about sex. This finding may have influenced the low association between sexual disagreement and women's sexual satisfaction.

Furthermore, this finding may suggest that men and women may perceive sexual disagreement differently. One's memory of a sexual disagreement is likely to be influenced by the salience of the issue. That is, the more important the issue in the argument, the more likely it is to be remembered. When examining couple's sexual disagreement, then, it is important that measures be as specific as possible so that one gets an accurate description of a couple's level of sexual disagreement.

Marital quality and women's sexual satisfaction also was believed to be related through couple's sexual disagreement. This link suggests that the more satisfied women are in their marriages, the less sexual disagreement couples would have, which would lead to an increase in women's sexual satisfaction. The link between marital quality and sexual satisfaction through sexual disagreement was supported. Marital quality and women's sexual satisfaction also was believed to be related through couple's levels of sexual frequency. This link also was supported and suggests that the more satisfied women are in their marriages, the more frequent their level of sexual activity, which may lead to an increase in sexual satisfaction. Thus, one way marital quality appears to exert influence on sexual satisfaction is through the sexual relationship itself.

Finally, depression was hypothesized to be related to women's sexual satisfaction both directly and through the quality of one's marriage. Though it was significant, the relationship between depression and women's sexual satisfaction was not strong. This finding is noteworthy because the mean level of depression in the sample was 17 on a scale from 0 to 105, with higher scores indicating higher levels of depression. Therefore, a relationship between depression and sexual satisfaction exists even when average levels of depression are low. This finding that depression is related to sexual satisfaction is consistent with the work of Cyranowski et al., 2004 and Frohlich & Meston, 2002 who also found depression to be related to sexual satisfaction.

There also was clear support for the hypothesis that depression and sexual satisfaction are related indirectly through marital quality. This study was the only one of those in the literature review to examine depression, marital satisfaction, and sexual satisfaction simultaneously. This finding is important because it is the beginning of an

understanding of how depression, marital satisfaction, and sexual satisfaction are all related. This means, then, that in order to understand how depression and sexual satisfaction are related, it is important to understand how depression and marriage are related. Furthermore, perhaps the severity of one's depression within marriage is the important factor to explore. Riso et al. (2002), in examining chronic versus nonchronic depression, found that those participants who reported chronic depression also exhibited significantly lower levels of marital satisfaction than the nonchronic participants. This finding has meaning for clinicians because often couples come to therapy presenting with sexual difficulties. When couples report depression in conjunction with sexual problems, it is necessary to ask about the quality of the marriage. More research is needed, therefore, that examines the relationship among depression, marital quality, and sexual satisfaction.

Strengths and Limitations

The present study used a large, national sample in order to better understand women's sexual satisfaction. The study also utilized couple data, which provided an opportunity to more fully capture aspects of the sexual relationship. Specifically, both husbands and wives were asked about the number of times per month that they engaged in sex with their partner and the frequency with which they had disagreements about sex.

An important limitation of this study was that we used existing items in the survey to create variables. That is to say that, questions could not be reworded or changed to accommodate the goals of this study. Also, causal language must be used with caution because the findings are based on data that are cross-sectional. It may be, for example, that those who are maritally and sexually satisfied have sex more frequently. The

direction of this relationship is unknown due to the ordering of the variables within the model. It is also important to note that, though this study replicated findings that marital satisfaction is important in explaining the variance in sexual satisfaction, other studies may conclude that sexual satisfaction is important in explaining the variance in marital satisfaction. That is, there is likely a reciprocal relationship between marital and sexual satisfaction. It is also probable that a reciprocal relationship exists between frequency of sexual activity and sexual satisfaction. High levels of sexual satisfaction may lead a couple to want to engage in more frequent sex. Thus, other directional models also may fit the data well.

Future Research Directions

Regarding the weak association between sexual disagreement and sexual satisfaction, it is important that future studies examine sexual disagreement in a broader sense. Research that focuses on a more comprehensive measure of couple's sexual communication may lead to a deeper understanding of the relationship between what couples talk about when it comes to sex, how they handle disagreements, and how these factors impact their levels of sexual satisfaction. For example, Cupach and Comstock (1990) used a detailed measure to assess couple's communication about sex. Questions in four areas including satisfaction with communication about sexual behavior, communication about what sexual behavior is satisfying, satisfaction derived from what is communicated by certain sexual behaviors, and willingness to communicate about sex with one's partner are specific and tap more information from couples regarding sexual communication.

From a systemic perspective, future research also should examine the disparity between husband's and wife's reports of sexual disagreement. It could be that the difference between spouses' views of their sexual disagreements is important to examine when focusing on women's marital satisfaction. In other words, the level of disagreement about the frequency of sexual disagreements may be more important to consider than individual-level perceptions of the amount of sexual disagreement.

Also, it is important to go beyond the variables in the model to better understand married women's sexual satisfaction. Other variables that are likely to be related to women's sexual satisfaction should be examined. For example, several studies have found a link between orgasm consistency and women's sexual satisfaction (Darling, Davidson, & Cox, 1991; Hurlbert, Apt, & Rabehl, 1993; Pinney, Gerrard, & Denney, 1987; Newcomb & Bentler, 1983; Zhou, 1993) and between attitudes toward sex and women's sexual satisfaction (Haavio-Mannila & Kontula, 1997; Perlman & Abramson, 1982). Expanding the model to include additional variables that have been empirically linked with sexual satisfaction will help provide a more complete, and nuanced picture of women's sexual satisfaction.

In summary, instead of focusing on a model of deficit or dysfunction such as sexual abuse and rape, anxiety, infection of STD's, negative sexual messages, and fear of pain (Wincze & Carey, 2001), this study focused on factors that enhance women's sexual satisfaction. It is important that therapists and counselors understand the relationship among marital quality, sexual frequency, sexual disagreements, depression, and sexual satisfaction when working with couples. It is also essential that research programs focus

on these factors in order to further what is known about women's sexual satisfaction. Using this model, clinicians and researchers can focus on how to promote women's sexual satisfaction instead of thinking "how do we get rid of sexual dysfunction?"

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