

WOMEN'S SEXUAL ATTITUDES, BODY IMAGE, AND SEXUAL ACTIVITY:

A MEDIATION ANALYSIS

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MASTER OF SCIENCE

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ABSTRACT

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Currently, an increasing number of women report sexual difficulties, and previous research has shown that both sexual attitudes and body image have a significant impact on women's sexual activity. While previous studies measured the influence of sexual attitudes and body image separately on sexual activity, the present study instead used mediational analyses to determine the direction of effects that sexual attitudes and body image have on sexual activity. Online surveys were administered to 401 emerging adult undergraduate and graduate female students. The surveys included self-report measures of conservative versus liberal sexual attitudes, body image, and frequency of sexual activity. Results indicated that liberal sexual attitudes predicted greater sexual activity. While mediation was not evident, indirect effects existed such that more liberal sexual attitudes led to higher body image which, in turn, led to increased sexual activity. Results also indicated that higher body image satisfaction predicted greater sexual activity. Evidence of partial mediation suggested that body image satisfaction led to more liberal sexual attitudes which, in turn, led to increased sexual activity. Although body image and sexual attitudes are both important factors that affect sexual activity, each influence alone is not enough to explain the complex cognitive process that leads to decisions regarding sexual activity. Therefore, prevention and intervention work for sexual difficulties should focus on how both factors work together to influence women's sexual experiences with a vigilant focus on reducing the effects of women's body and sexual objectification as one step toward improving their overall health and well-being in family, couple, or dating contexts.

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INTRODUCTION

Research indicates that sexual difficulties, such as problems with performance, frequency, desire, and satisfaction, have been increasingly reported in the U.S. population (Purdon & Holdaway, 2006; Robins et al., 1984). In fact, up to 63% of women report experiencing sexual difficulties in their lifetimes (Heiman, 2002). Such sexual difficulties have been linked to other problems, including decreased happiness (Laumann, Gagnon, Michael, & Michaels, 1995), poorer self-esteem and well-being (Heiman, 2002), and relational distress (Pridal & LoPiccolo, 2000). Furthermore, sexual problems have been highly correlated with decreased sexual frequency (Masters & Johnson, 1970). Given the pervasiveness of sexual difficulties and their associated problems, it is disappointing that the psychosocial factors that impact sexual functioning among young women are not yet well-understood. Societal messages regarding gender, sexuality, and our bodies shape how women think about and experience sex. Past empirical work began to address this issue by determining how positive or negative cognitions impact one's sexual activity (Barlow, 1986; Kaplan, 1974; Masters & Johnson, 1970). More specifically, researchers have identified two important types of cognitions that play a significant role in predicting sexual activity: body image and sexual attitudes (Faith & Schare, 1993). However, the specific role that each of these factors play, either separately or together, has yet to be fully explained. Thus, the present study examined these particular cognitions by testing the direction and possible mediating effects of body image and sexual attitudes on the sexual activity of emerging adult women.

The cultural experiences of women can encourage body image dissatisfaction. For example, mass media exposure (Groesz, Levine, & Murnen, 2002), sexual abuse (Smolak

& Murnen, 2002), and traditional beliefs regarding femininity (Murnen & Smolak, 1997) have been associated with body image dissatisfaction. Women's bodies are linked to femininity in a manner that "disproportionally associates women's worth with their bodies" (Leavy, Gnon, & Ross, 2009, p. 286). High rates of body image dissatisfaction have often been reported among college-aged women (Klemchuck, Hutchinson, & Frank, 1990) because they are faced with an unrealistic socioculturally determined thin body ideal (Myers & Crowther, 2007). In fact, body image dissatisfaction is so common among women in North America that it has been considered "normative" or typical (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). This typical dissatisfaction can be explained using objectification theory (Murnen & Smolak, 2009), which argues that, in our patriarchal culture, women are subordinated through the objectification and degradation of their bodies (Bordo, 2003; Kilbourne, 1999; Wolf, 1991). Women's bodies are treated as objects that exist to be evaluated and used for the pleasure of others (Murnen & Smolak, 2009). This objectification, as a form of sexism, becomes internalized as women view their own bodies from the perspective of a potential observer (Fredrickson & Roberts, 1997). Through societal objectification and internalized sexism, women learn to monitor their own bodies which, in turn, can lead to body image dissatisfaction and shame in failing to meet unrealistic expectations of the thin ideal. This self-monitoring puts women at risk for other problems such as eating disorders, depression, and sexual difficulties (Fredrickson & Roberts, 1997; McKinley & Hyde, 1996; Murnen & Smolak, 2009; Smolak & Murnen, 2007).

Because of the social system set up to maintain men's authority while working to control and subordinate women, known as patriarchy, women's bodies are objectified more

so than men's in Western cultures (Fredrickson & Roberts, 1997; Ward, 2003; Wolf, 1991). A heightened awareness and internalization of this objectification (Dove & Wiederman, 2000; McKinley & Hyde, 1996) may lead to cognitive removal or distraction from one's sexual experience (Masters & Johnson, 1970; Walen; 1980). Piran and Cormier (2005) explain that this objectification, or a focus on how the body looks rather than feels, can lead women to experience a disconnection from their bodies, in turn negatively impacting their sexual engagement and satisfaction. A heightened awareness and concern about the body may stem from societal objectification of women and sociocultural messages about ideal body appearance, which can ultimately lead to distraction during or complete avoidance of sexual activity (Monteath & McCabe, 1997). Therefore, women may be particularly susceptible to sexual difficulties. In fact, research has found that higher rates of women (43%) report sexual problems in comparison to men (31%) (Laumann, Paik, & Rosen, 1999). It is important to note that while some research in this area has focused on samples presenting with clinically diagnosed sexual dysfunctions such as hypoactive sexual desire disorder, orgasmic disorder, and vaginismus (Nobre, Pinto-Gouveia, and Gomes, 2003; Nobre & Pinto-Gouveia, 2006a, Nobre & Pinto-Gouveia, 2008), most research has used the terms sexual dysfunction and sexual difficulties interchangeably to refer to a wide variety of sexual problems (physical and/or psychological) reported by women. Therefore, we used the term sexual difficulties to represent a wide range of sexual problems, including those which did not meet criteria for clinically diagnosed sexual dysfunction.

High rates of body image problems among college women have been reported (Klemchuk, Hutchinson, & Frank, 1990). For example, McCaulay, Mintz, and Glenn

(1988), found that 55% of female undergraduates perceived themselves to be overweight, whereas only 6% actually fell within that weight category. In their study of university females, Monteath and McCabe (1997) found that 94% of the women in their sample expressed a desire to be thinner and 44% expressed dissatisfaction with their bodies. Monteath and McCabe (1997) also found that 18% of the women in their sample reported feeling negatively about their sexual attractiveness due to beliefs about their bodies. Because young women appear to be a highly targeted population with regard to unrealistic societal standards that make them more susceptible to the influence of negative cognitions and body image dissatisfaction, the present study focuses exclusively on emerging adult women in college.

A clear understanding of the impact that body image and sexual attitudes have on sexual activity in college women serves as an important foundation for future research in this area. Therefore, defining each of these variables in a way that is both based on previous literature and also expanded to be more comprehensive is necessary. For the purposes of the present study, sexual activity was understood as activities associated with sexual genital contact between individuals, including intercourse, oral sex, and anal sex. Sexual attitudes were defined as beliefs or ideas that individuals have regarding sexual matters that guide how they interpret events, in turn influencing their behavior and emotions (Nobre et al., 2003). Sexual attitudes can range from liberal (i.e., more open or flexible in response to a wide range of sexual ideas) to conservative (i.e., more unwilling to accept or more rigid in response to a wide range of sexual ideas) (Faith & Schare, 1993). For example, individuals with liberal sexual attitudes are more comfortable with, and open to, a wide range of ideas regarding gender roles in sexual situations, sexual satisfaction,

and types of sexual activity while those with conservative sexual attitudes are less willing to explore and accept a wide range of ideas regarding gender roles, sexual satisfaction, and sexual activity. Sexual attitudes also contain rules that define the way a person assigns meaning to sexual events (Nobre & Pinto-Gouveia, 2006a). For example, if a woman held the belief that orgasm is necessary for “good sex,” then she would have to fulfill that condition for a sexual event to be considered “good.” Research on sexual attitudes has demonstrated that college women are more likely than men to have conservative as opposed to liberal sexual attitudes (Faith & Schare, 1993), meaning that they are less open or comfortable with a wide range of sexual ideas than men. Furthermore, sexual attitudes proved to be the most significant predictor of whether or not college men and women engaged in sexual activity (Faith & Schare, 1993). Thus, sexual attitude was the first factor that we measured in order to determine its potential effects on sexual activity. Although it is apparent that sexual attitudes influence sexual activity, sexual attitudes are only one part of a very complex process (Faith & Schare, 1993). Body image may be another factor, working in combination with sexual attitudes, to influence sexual activity (Andersen & LeGrand, 1991; Faith & Schare, 1993).

Previously held definitions of body image involved unusual or “deviant perceptions, feelings, and beliefs concerning the body” that were often thought to be suggestive of psychological illness (Andersen & LeGrand, 1991, p. 457). The definition of body image has changed from this initial conception, but is variably defined in the current literature. For this reason, it is important to describe the conceptualization of body image as it was applied in the present study. Thus, body image was defined as the subjective concept of one’s physical appearance based on self-observation and the reactions of others (Ackard,

Kearney-Cooke, & Peterson, 2000; Andersen & LeGrand, 1991). Additionally, body image is an attitude involving “positive or negative feelings about the body” (Andersen & LeGrand, 1991, p. 458). Consistent with findings from American-based psycho-social studies on women’s body image (Bordo, 2003; Hesse-Biber, 1996; Seid, 1989), Grogan (1998) indicated that body dissatisfaction is widespread among women in Westernized cultures and has a significant impact on behavior. In fact, multiple studies have found that body image concerns begin as early as age six in girls (Ambrosi-Randic, 2000; Davison, Markey, & Birch, 2000; Dohnt & Tiggemann, 2006; Poudevigne, O’Connor, Laing, Wilson, Modlesky, & Lewis, 2003). Approximately 50% of girls ranging from pre-adolescence to emerging adulthood report body dissatisfaction (Bearman, Presnell, & Martinez, 2006; Monteath & McCabe, 1997). Additionally, body image concerns have been linked to depression, social introversion and anxiety, negative self-esteem, and eating disorders in female populations of all ages (Attie & Brooks-Gunn, 1989; Noles, Cash, & Winstead, 1985; Smolak, 2004; Dohnt & Tiggemann, 2006). Grogan (1998) states that “most women try to change their shape and weight...and many women avoid activities that would involve exposing their bodies” (p. 2). Therefore, a negative body image is likely to adversely impact sexual functioning and activity through avoidance and cognitive distraction.

As factors impacting daily functioning, health, and experiences, young women’s sexual attitudes and preoccupation with body image require much attention. While it is understood that both sexual attitudes and body image have an effect on women’s sexual activity, the direction of effects between sexual attitudes and body image is unclear.

Therefore, two separate mediation models were considered. Specifically, the present study

sought to examine a model that proposed body image as a mediating factor in the impact of sexual attitudes on sexual activity as well as a model that proposed sexual attitudes as a mediating factor in the impact of body image on sexual activity in college women. Such mediator models assumed that body image intervenes in the relationship between sexual attitudes and sexual activity or that sexual attitudes intervene in the relationship between body image and sexual activity. Consistent with the proposed mediator models, the following sections explore the links between sexual attitudes and sexual activity, body image and sexual activity, and the relationship between sexual attitudes, body image, and sexual activity together.

Sexual Attitudes and Sexual Activity

Sexual attitudes are often salient when choosing whether or not to engage in sexual activity, and negative attitudes can lead to distracting thoughts and emotions, such as guilt, during sexual activity (Nobre & Pinto-Gouveia, 2006b). Women's sexual attitudes are influenced by factors that often put them in a double-bind regarding sexuality. For example, while female sexuality has historically been suppressed and deemed as immoral by society for various reasons (e.g., control over women's bodies and reproductive rights, religious restrictions), women have also been encouraged to embrace a so-called sexual revolution, with the expectation of sexual permissiveness (Baumeister & Twenge, 2002). However, this sexual permissiveness has still been governed by the male gaze, or visual inspection and evaluation of the female body (Frederickson & Roberts, 1997). So while women contend with messages surrounding the desire to be virtuous and the sexual double standard, they also are objectified and evaluated based on their bodies in a way that sexualizes them and promotes sexual promiscuity. In other words, women still contend

with a socially accepted judgment that positions their bodies to be available for the approval of others (Frederickson & Roberts, 1997). Frederickson and Roberts (1997) also suggest that this objectification leads to feelings of shame and anxiety, which have the potential to influence sexual activity. Brown (2004) defines shame as an immensely hurtful experience which results from a belief about oneself as being flawed and unworthy of acceptance and belonging. Brown (2004) also explains that women most often experience shame when becoming trapped by conflicting and competing social expectations, and especially struggle with regard to conservative expectations surrounding appearance and sexuality. The shame produced by conservative expectations and attitudes generates an intense desire to hide or escape the gaze of others, leading some women to avoid sexual situations altogether (Frederickson & Roberts, 1997). Shame also disrupts ongoing activity as it directs attention to self focus, often resulting in less connection with a partner or diminished engagement during sexual activity (Frederickson & Roberts, 1997). Thus, sexual attitudes can contribute to shame, guilt, anxiety, and fear regarding sex, reducing the possibilities for sexual activity and enjoyment.

Feelings of shame and anxiety are also closely connected to certain attitudes and fears regarding sexual activity. Conservative sexual attitudes involving the role of affection in sex (Tevlin & Leiblum, 1983), the fear of losing control (Hawton, 1985; Kaplan, 1979; Lazarus, 1988; LoPiccolo & Friedman, 1988; Rosen & Leiblum, 1995), and the fear of social rejection and/or criticism (Nobre et al., 2003) are among the most commonly reported causes of female sexual difficulties. Hawton (1985) highlighted the significance of women's sexual attitudes reflecting the double standard (i.e., permissive but demanding for men and repressive for women) as contributing to sexual difficulties. Nobre, Pinto-

Gouveia, and Gomes (2003) measured liberal versus conservative sexual beliefs and how they relate to sexual functioning among clinical and non-clinical samples of adult women. These researchers found that if a woman maintained conservative attitudes about sexuality (e.g., believing that “vaginal coitus is the only acceptable way of having sex”), she also reported higher rates of sexual difficulties (e.g., “difficulties experiencing orgasm”) (Nobre et al., 2003, p. 193). Nobre and colleagues also found that more conservative sexual attitudes were connected to a greater tendency to deny sharing information about one’s desire and taking the time needed to please a partner. In their study of college men and women, Faith and Schare (1993) found that sexual frequency was best predicted by sexual attitudes, with conservative attitudes leading to less sexual activity. On the other hand, liberal sexual attitudes have been associated with more frequent engagement in sexual activity (Faith & Schare, 1993), confidence (Nobre et al., 2003), and less fear and shame (Rosen & Leiblum, 1995). Although it is apparent that sexual attitudes influence sexual activity, body image may be another factor, working in combination with sexual attitudes to affect sexual activity (Andersen & LeGrand, 1991; Faith & Schare, 1993).

Body Image and Sexual Activity

Questions regarding the impact of “self-focused attention,” or the cognitive evaluation of one’s own body parts and feelings of adequacy, on sexual functioning laid the foundation for studying the connection between body image and sexual activity (Faith & Schare, 1993). Masters and Johnson (1970) originally proposed that an important influence on sexual activity involves spectating. Spectating is a cognitive self-absorption in which individuals fixate on and carefully monitor personal body parts and/or the adequacy of personal sexual functioning (Masters & Johnson, 1970). Spectating seems to be an

important issue associated with self-focused attention (Kaplan, 1974) during sexual activity. Barlow (1986) proposed that spectating derives from negative sexual schema, which in turn derives from more rigid/conservative attitudes regarding sexuality. Barlow (1986) found spectating to be an anxiety-evoking distraction leading to reduced sexual activity. For instance, if a woman is more focused on how others (e.g., a partner) might perceive her and her body, she is less able to fully enjoy her body and the pleasure it is capable of during sexual activity.

The influence of body image on sexual activity may not be solely due to the process of spectating, but rather associated with the combination of self-evaluative experiences and whether or not they have a negative bias (Andersen & LeGrand, 1991). It is likely that a negative self-evaluation stems from social objectification and internalization of societal messages about what women's bodies are supposed to look like (i.e., the thin ideal) (Frederickson & Roberts, 1997). Part of this objectification involves the unrealistic standards that women's bodies are held to, which can produce negative feelings about one's body when it fails to meet those standards (Frederickson & Roberts, 1997). Therefore, a combination of negatively biased self-evaluations creating a negative body image would most likely lead to avoidance of or distraction during sexual activity. Indeed, previous research demonstrates the connection between positive views of the body and higher sexual esteem and assertiveness in emerging adult samples of white, heterosexual women (Wiederman, 2000; Wiederman & Hurst, 1998). Conversely, research has demonstrated that a more negative self-evaluation resulted in more fears regarding sex and feelings of less control in sexual relationships for females (Wingwood, DiClemente,

Harrington, & Davies, 2002). Self-evaluation and body image seem to be closely connected factors, especially regarding their impact on sexual activity.

As feelings about one's body have been linked to general feelings about the self, the bodily self can be understood as an important part of self-esteem (Lerner, Karabenick, & Stuart, 1973; Padin, Lerner, & Spiro, 1981). Self-esteem is derived from standards of value provided by an internalized cultural worldview, with standards regarding the physical body being particularly important (Goldenberg, McCoy, Pyszczynski, Greenberg, & Solomon, 2000). Whereas the belief that one's body is meeting cultural standards has positive outcomes, failure to meet cultural standards regarding one's body may contribute to a broad range of psychological, physical, social, and sexual problems (Goldenberg et al., 2000). For example, Brown (2004) found that 90 percent of the women in her study experienced shame about their bodies. As a component of both self-esteem and identity, body image can transcend the realm of appearance and impact why and how women feel shame about all aspects of life, including sexuality (Brown, 2004). "Sex is an activity that is inextricably tied to how people feel about their bodies" (Goldenberg et al., 2000, p. 122). College-aged women with a positive body image tend to express liberal attitudes towards sex and increased sexual frequency, while those with poor body image report avoidance of sexual activities (Faith & Schare, 1993; Wiederman & Hurst, 1998). Given the cultural emphasis on physical attractiveness, positive body image has been shown to contribute to obtaining self-worth through sexual experiences (Goldenberg et al., 2000). In fact, those with higher body image tend to view the physical aspects of sex as more appealing (Goldenberg et al., 2000).

Several studies have provided evidence for a direct relationship between body image and sexual activity in college populations (Faith & Schare, 1993; Murstein & Holden, 1979; Trapnell, Meston, & Gorzalka, 1997). All of these studies found negative body image to be associated with lower levels of sexual activity. Research has also indicated that emerging adult women with higher body image self-consciousness are less likely to experience orgasm or satisfaction with sexual activity than women with less body image self-consciousness (Dove & Wiederman, 2000; Fredrickson & Roberts, 1997). Furthermore, in their study of primarily white, heterosexual women ranging from 14 to 74 years of age, Ackard, Kearney-Cooke, and Peterson (2000) found that women satisfied with their body image, compared to those dissatisfied with their body image, reported having sex, achieving orgasm, and initiating sex more frequently. Those satisfied with their body image, compared to those dissatisfied with their body image, also experienced greater comfort when exposing their bodies during sex and greater comfort when trying new sexual activities (Ackard et al., 2000). Emerging adult, single women who reported having more extensive sexual experience tended to rate their bodies and attributes more positively than women with less sexual experience (MacCorquodale & DeLamater, 1979). Further, Faith and Schare (1993) found that college women conceptualized their bodies more negatively than college men, due in part to greater societal pressure for women to have the perfect, thin body.

Previous studies have also examined the effects of negative body image reportedly experienced *during* sexual activity. For example, Purdon and Telford (1999) found that women reported higher numbers of unattractive body features when contemplating having sex and engaged in more strategies to compensate for them during sex. The researchers

concluded that body self-consciousness impairs sexual functioning in women (Purdon & Telford, 1999). Subsequent research also found that over one-third of white women aged 18 to 21 reported experiencing body image self-consciousness during sexual activity at least some of the time (Wiederman, 2000).

Although previous research supports the impact of negative body image on sexual activity, Ackard, Kearney-Cooke, and Peterson (2000) found that it was not the strongest, nor the most significant, predictor of certain elements of sexual activity such as comfort with partner and frequency of sexual activities. Andersen and LeGrand (1991) also found that while women's body image was linked to variables such as interest in engaging in sexual activity, it was not influential enough to determine sexual functioning. Thus, body image and sexual attitudes may work together to affect sexual activity.

Sexual Attitudes, Body Image, and Sexual Activity

Sexual attitudes and body image, as physically-oriented domains of the self, are likely to be closely connected (Gillen, Lefkowitz, & Shearer, 2006). Sexual beliefs and/or attitudes have traditionally been studied by applying cognitive theory (Beck, 1996). Accordingly, there are two levels of beliefs: core ideas that one has about herself, others, and the world (unconditional) and more intermediate ideas that are the result of learning and life experience which stipulate conditions for the activation of unconditional beliefs (conditional) (Nobre & Pinto-Gouveia, 2006a). For example, when a sexual situation (e.g., occasional lack of orgasm) fulfills the conditions stipulated by a conditional belief (e.g., "a woman who fails to orgasm during sexual activity is a complete failure"), an unconditional belief (e.g. "I'm a failure") would be activated. In this way, sexual attitudes can often be

explained as conditional beliefs, but could result in the activation of an unconditional belief about one's body.

Studies have pointed to certain sexual attitudes or beliefs as factors that impact body image and ultimately affect sexual activity. Whereas previous research examined the impact of sexual myths on female sexuality (Hawton, 1985), later work has focused on the specific significance of female sexual conservatism and beliefs about body appearance (Heiman & LoPiccolo, 1988). For example, Heiman and LoPiccolo (1988) found that sexual myths not only integrate beliefs related to female sexual conservatism, but also include dimensions related to physical appearance. Other findings on college samples of men and women also suggest that individuals who report less comfort with various elements of sexual activity (i.e., are more conservative) also have poorer views of their bodies (Ackard et al., 2000; Faith & Schare, 1993; Trapnell et al., 1997; Wiederman, 2000). Conversely, in their study of single, undergraduate men and women, MacCorquodale and DeLamatar (1979) found more permissive (liberal) attitudes to be connected to perceiving oneself as more attractive. Despite this research, the direction of effects between body image and sexual attitudes remains uncertain. It is unknown whether particular sexual attitudes lead to body image problems or vice versa.

Conservative attitudes (Kaplan, 1979; LoPiccolo & Friedman, 1988; Masters & Johnson, 1970) and negative body image beliefs (LoPiccolo & Friedman, 1988; Rosen & Leiblum, 1995) are among the most commonly cited causes of female sexual difficulties. Recent research has taken into account the additive influence of both body image and sexual attitudes on sexual activity. For instance, Faith and Schare (1993) indicated that while body image significantly predicted frequency of sexual behaviors, sexual attitudes

were the best predictors of sexual approach versus avoidance behaviors for both female and male college students. Purdon and Holdaway (2006) similarly took into account body image and sexual attitudes in measuring the effects of a broad range of non-erotic thoughts during sexual activity. In their study of heterosexual students under the age of 25, they found that women were more likely to report thoughts about body image than were men and that both women and men were equally likely to consider the emotional consequences of the activity from a moral standpoint (Purdon & Holdaway, 2006). These emotional consequences (e.g., guilt, shame, etc.) can represent sexual attitudes when understood in a morality-type framework (e.g., feeling as if you are or have done something “good” or “bad”). More non-erotic thoughts and greater anxiety with regard to those thoughts were related to poorer sexual functioning and lower sexual satisfaction for women (Purdon & Holdaway, 2006).

Subsequent research found that women who were clinically diagnosed with hypoactive sexual desire disorder, orgasmic disorder, or vaginismus presented more sexually conservative beliefs, had more negative body image beliefs, and regarded the importance of body appearance as a central factor for sexual success and satisfaction compared to women in a non-clinical sample (e.g., Nobre & Pinto-Gouveia, 2006a). Further, Nobre and Pinto-Gouveia (2008) found negative body image beliefs and thoughts regarding the focus on body appearance to be strongly associated with orgasmic disorder and conservative sexual attitudes to be closely related to low sexual desire and arousal difficulties in women. Gillen, Lefkowitz, and Shearer (2006) examined the connections among body image, sexual activity, and risky sexual attitudes (i.e., attitudes that might increase individuals’ risk for negative sex-related outcomes such as sexually transmitted

infections), finding positive body image to be a protective factor in predicting heterosexual, emerging adult women's sexual behavior (i.e., practicing safer sex). Results also indicated that women who were more oriented toward their appearance, or more influenced by body image, endorsed societal views regarding gender and sexuality, or the sexual double standard (Gillen, Lefkowitz, & Shearer, 2006). The combined results from these studies indicate that body image and sexual attitudes play a role in possibly predicting different types of sexual difficulties, but lack an explanation of how they interact in the process leading to sexual activity. The nature of the relationship and direction of effects among sexual attitudes, body image, and sexual activity have yet to be thoroughly studied.

The Present Study

While previous research has examined both sexual attitudes and body image as factors influencing sexual activity, their impact on sexual activity has only been considered separately (i.e., as an additive model). Given the seemingly large impact that sexual attitudes and body image have on sexual activity, the present study extended this notion in a new way by assessing if either sexual attitudes or body image served as a mediator in predicting sexual activity. Similar to most samples used in previous studies, the present study examined the direction of effects among sexual attitudes, body image, and sexual activity within a primarily white, heterosexual sample of women.

In addition, we examined these relations among a sample of emerging adult women between the ages of 18 and 25. It is especially important to focus on this age group for multiple reasons. Emerging adulthood is a period of identity exploration in many ways, including the opportunity for significant moral and emotional development, as well as for sexual development (Arnett, 2000). Emerging adulthood is a period of frequent change,

offering numerous possibilities for exploration in love, work, and worldviews: a time in which life decisions are made that have long-term ramifications (Arnett, 2000).

Furthermore, the period of emerging adulthood often involves ungoverned exposure to sexual partners for the first time, specifically during the college experience. Explorations in love become more intimate and serious, dating is more likely to focus on exploring the potential for emotional and physical intimacy, and romantic relationships are more likely to include sexual activity and even cohabitation during this time (Arnett, 2000).

The present study addressed the following research questions:

1. Does a woman's sexual attitude (ranging from liberal to conservative) have a direct effect on her sexual activity?
2. Can this relationship be explained (or mediated) by her body image?
3. Does a woman's body image have a direct effect on her sexual activity?
4. Can this relationship be explained (or mediated) by her sexual attitudes?

Hypothesis 1 predicted that conservative sexual attitudes would be associated with less sexual activity and that liberal sexual attitudes would be associated with greater sexual activity. Hypothesis 2 predicted that conservative sexual attitudes would contribute to a more negative body image, which would result in decreased sexual activity. Conversely, hypothesis 2 also predicted that liberal sexual attitudes would contribute to a more positive body image, which would result in increased sexual activity. Thus, it was expected that body image would mediate the relationship between sexual attitudes and sexual activity. See Figure 1.

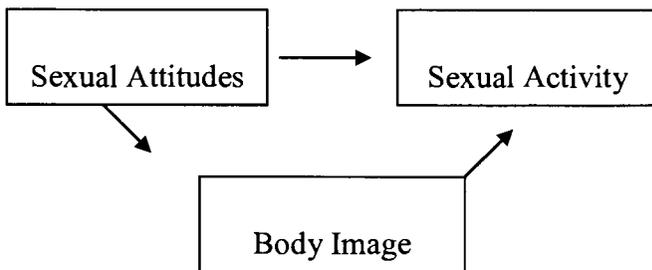
Hypothesis 3 predicted that higher body image satisfaction would be associated with greater sexual activity and that lower body image satisfaction would be associated

with less sexual activity. Hypothesis 4 predicted that higher body image satisfaction would contribute to more liberal sexual attitudes, which would result in increased sexual activity. Conversely, hypothesis 4 also predicted that lower body image satisfaction would contribute to more conservative sexual attitudes, which would result in decreased sexual activity. Therefore, it was expected that sexual attitudes would mediate the relationship between body image and sexual activity. See Figure 2.

a) Direct effects model with sexual attitudes predicting sexual activity



b) Full model with sexual attitudes, body image, and sexual activity



c) Mediation model with body image mediating the relationship between sexual attitudes and sexual activity

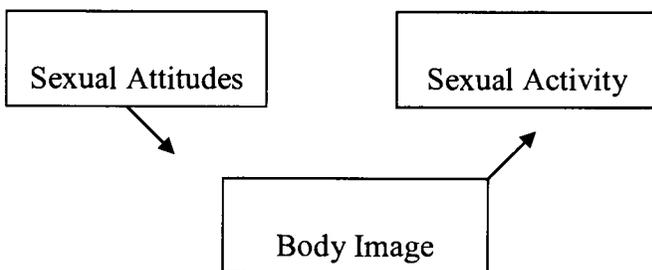
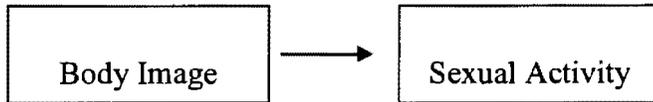
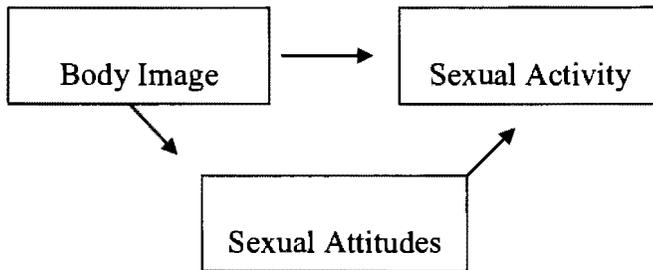


Figure 1. Direct effects, full, and mediation models for sexual attitudes, body image, and sexual activity

a) Direct effects model with body image predicting sexual activity



b) Full model with body image, sexual attitudes, and sexual activity



c) Mediation model with sexual attitudes mediating the relationship between body image and sexual activity

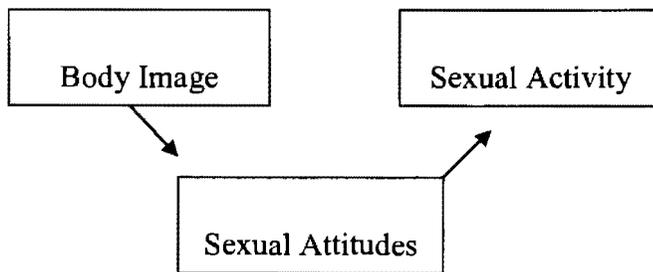


Figure 2. Direct effects, full, and mediation models for body image, sexual attitudes, and sexual activity

METHOD

Participants

As part of a larger study, data were gathered from 401 female students drawn from a population of nearly 6000 female undergraduate and graduate students attending a public university in a Midwestern city (NDSU, 2008). The sample consisted of 368 undergraduate students and 32 graduate students. Participants ranged in age from 18 to 25 ($M = 20.66$, $SD = 1.75$). Consistent with the ethnic population of the university, most of the sample identified themselves as White (95%). Additionally, less than 1% identified themselves as Black, Hispanic, or Biracial, 3% as Asian American, and 1.2% as Other. Participants were also asked to indicate their sexual orientation, dating status, and marital status. Most of the sample identified themselves as straight (95.8%). Additionally, less than 1% identified as lesbian and 3.5% identified as bisexual. Participants indicated that they were currently dating one person (47.4%), were not dating anyone (29.4%), or were currently dating more than one person (3.2%). Additionally, 68.3% of the sample reported being single, 10.7% reported being partnered, 4.7% reported being married, 7% reported cohabitating, 8% reported being engaged, and none reported being divorced.

Procedure

As part of a larger study, participants were recruited through email invitations and in-class advertisement of the study (see Appendix D for email invitation and Appendix E for advertisement flyer). Participants who completed the study could choose to be entered in a prize drawing for the opportunity to win one of the following incentives: a flat screen LCD television, a \$50 gift card to a university bookstore, a \$50 Target gift card, or a \$50 restaurant gift card.

Participants were directed to an internet link where they first had to acknowledge informed consent without revealing their identity (see Appendix F for informed consent document). Participants were then asked to complete a series of questionnaires that included demographic information as well as scales addressing the frequency of their sexual activity, body image, and sexual attitudes. Finally, participants were directed to a new, separate internet link where they were able to choose to enter in a prize drawing while keeping their participation confidential. The name and contact information that participants provided on the second survey link was not connected with any information provided in the series of previous questionnaires.

Measures

The present study focused only on measures of sexual attitudes, body image, and sexual activity. Participants completed three questionnaires that measured sexual attitudes (ranging from liberal to conservative), body image, and sexual activity.

Sexual attitudes. Sexual attitudes were defined as beliefs or ideas that one has regarding all sexual matters that guide how she interprets events, influencing her behavior and emotions. Sexual attitudes can range from being considered liberal (i.e., more open or flexible in response to a wide range of sexual ideas) to conservative (i.e., more unwilling to accept or more rigid in response to a wide range of sexual ideas). Participants completed an 18-item combined and revised version of the Derogatis Sexual Functioning Inventory Sexual Attitudes subscale (DSFI; Derogatis & Melisaratos, 1979), the revised Sexual Opinion Survey (SOS; Fisher, Byrne, White, & Kelley, 1988), and the female version of the Sexual Dysfunctional Beliefs Questionnaire (SDBQ; Nobre et al., 2003) to measure sexual attitudes. The previously discussed DSFI Sexual Attitudes Subscale has been shown

to have high internal consistency on both liberal (.81) and conservative (.86) items as well as high test-retest reliability on both liberal (.92) and conservative (.72) items (Derogatis & Melisaratos, 1979). The SOS has also been shown to have high internal consistency (.92) and evidence of convergent and discriminant validity (Fisher et al., 1988). Lastly, the female version of the SDBQ has been shown to demonstrate good stability across time with an internal consistency coefficient of .81 (Nobre et al., 2003) and convergent validity with multiple measures such as the Sexual Self-Schema Questionnaire (SSS; Andersen & Cyranowski, 1994) and the Female Sexual Function Index (FSFI; Rosen et al., 2000).

These scales were used to create the 18-item Sexual Attitudes Scale, which was less redundant, more comprehensive, and more applicable to current times and language regarding sexual attitudes, removing any sexist language. The revised scale included nine items that were sexually conservative statements and nine corresponding items that were sexually liberal statements. As in previous studies (Derogatis & Melisaratos, 1979; Fisher et al., 1988; Nobre et al., 2003) sexual attitudes were assessed by asking participants to use a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) to indicate the level of agreement with either conservative or liberal statements regarding sexual attitudes. Conservative statements such as, “Group sex is a bizarre and disgusting idea” (DSFI, 1979) and “Masturbation is wrong” (SDBQ, 2003) and corresponding liberal statements such as, “Engaging in group sex is an entertaining idea” (SOS, 1988) and “Masturbation is a perfectly normal, healthy sexual behavior” (DSFI, 1979) were included in the scale. Liberal items were reverse scored such that higher scores indicated a higher level of conservative attitudes. For the present study, internal reliability (Cronbach’s alpha) for the Sexual Attitudes Scale was .89. See Appendix A for the Sexual Attitudes Scale.

Body image. Body image was defined as the subjective concept of one's physical appearance based on self-observation and the reactions of others. Body image was measured with the Body Image subscale from the DSFI (Derogatis & Melisaratos, 1979), which has been shown to have an internal consistency of .58 and to correlate well with global sexual satisfaction and body image (Derogatis & Melisaratos, 1979). The Body Image subscale consists of 15 items (10 gender-neutral items and 5 gender-specific items) to reflect the participant's level of appreciation of her body. Participants were asked to determine how true statements like "I have a shapely and well-proportioned body" and "sexual partners would find my body attractive" were for them. A single Body Image score was developed after examining the participant's responses indicating how true each statement was on a 6-point Likert scale ranging from 0 (Not at all) to 5 (Extremely) (Derogatis & Melisaratos, 1979). Items were scored such that higher scores indicated greater body image satisfaction. For the present study, internal reliability (Cronbach's alpha) for the DSFI Body Image subscale was .71. See Appendix B for the complete scale.

Sexual activity. Sexual activity was understood as involving all activities associated with sexual genital contact between individuals. Based on items from the self-report survey, "Does Your Body Image Affect Your Love Life?" (Ackard et al., 2000), the following three questions were used to assess the frequency of sexual activity:

1. How often do you have sexual intercourse?
2. How often do you have anal sex?
3. How often do you have oral sex?

Participants responded using a 5-point Likert scale ranging from 1 (Never) to 5 (Daily). Higher scores indicated more frequent participation in sexual activity. For the present

study, internal reliability (Cronbach's alpha) for these three sexual activity items was .70. See Appendix C for the items.

Analysis Plan

To examine the mediational hypotheses in the present study, linear and multiple regression procedures were used. According to Baron and Kenny (1986), mediational analysis involves the examination of three separate models: a direct effects model, a full model which includes all direct and indirect pathways, and a mediation model which removes the direct path while maintaining the indirect paths. Two separate mediational analyses were used to determine the direction of effects between body image and sexual attitudes on sexual activity. PASW version 18.0 statistical software was used for all analyses.

RESULTS

Descriptive Statistics

Means, standard deviations, and ranges for the study variables are reported in Table 1. These statistics show that participants had a slightly more liberal than conservative mean sexual attitudes score of 51.98 ($N = 401$, $SD = 11.07$), a moderate mean body image score of 38.73 ($N = 401$, $SD = 6.97$), and a mean sexual activity score of 6.21, which means that they had a moderate level of participation in sexual activity ($N = 401$, $SD = 2.34$).

Correlations among the study variables are reported in Table 2. These correlations show significant relationships between sexual attitudes and body image ($r = -.13$, $p < .05$), sexual attitudes and sexual activity ($r = -.43$, $p < .01$), and body image and sexual activity ($r = .17$, $p < .01$).

Table 1

Descriptive Statistics of Study Variables

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	Range	
				Potential	Actual
Sexual attitudes	401	51.98	11.07	18-90	20-85
Body image	401	38.73	6.97	0-75	19-59
Sexual activity	401	6.21	2.34	3-15	3-15

Table 2

Correlations among Study Variables

Variable	1	2	3
1. Sexual attitudes	---	-.13*	-.43*
2. Body image		---	.17*
3. Sexual activity			---

Note. * $p < .05$.

Scatterplots for each variable as a function of age are also included in Figures 3 through 5. As depicted, participants between the ages of 18 and 25 had similar scores on sexual attitudes, body image, and sexual activity. This means that there were no identifiable outliers on these variables when age was considered.

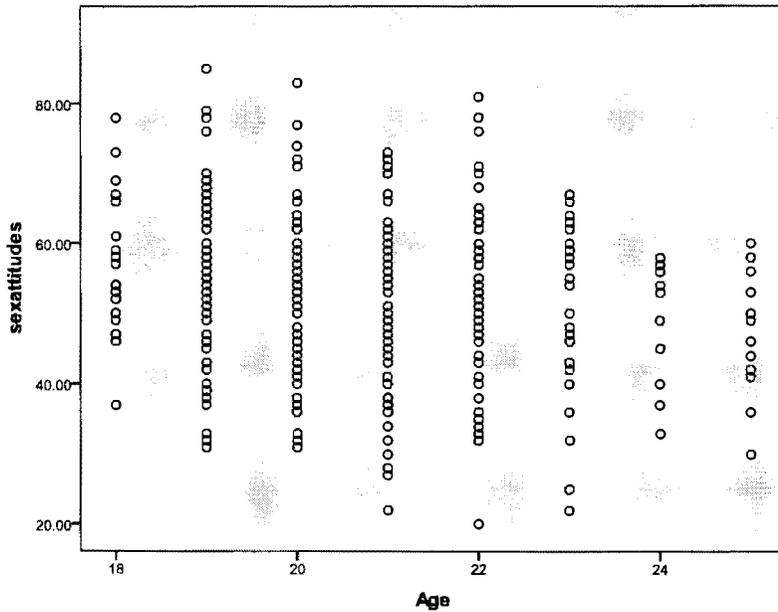


Figure 3. A scatterplot of sexual attitudes according to age

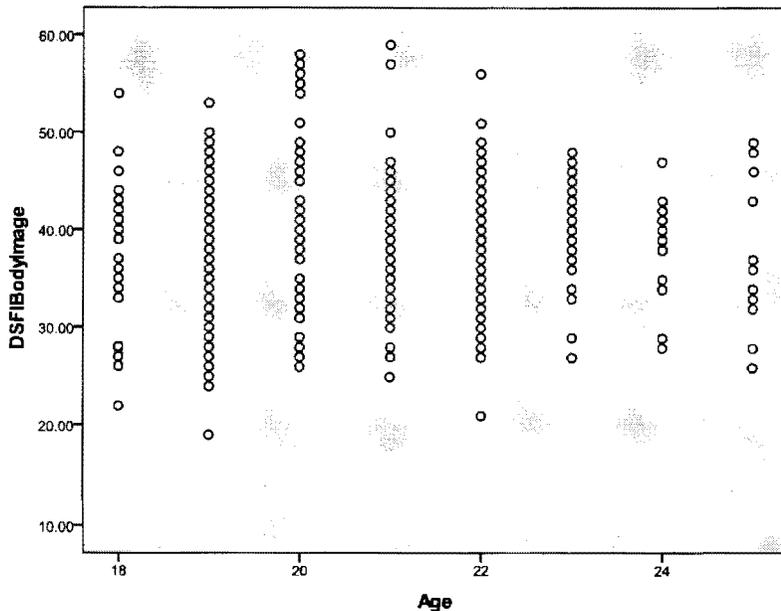


Figure 4. A scatterplot of body image according to age

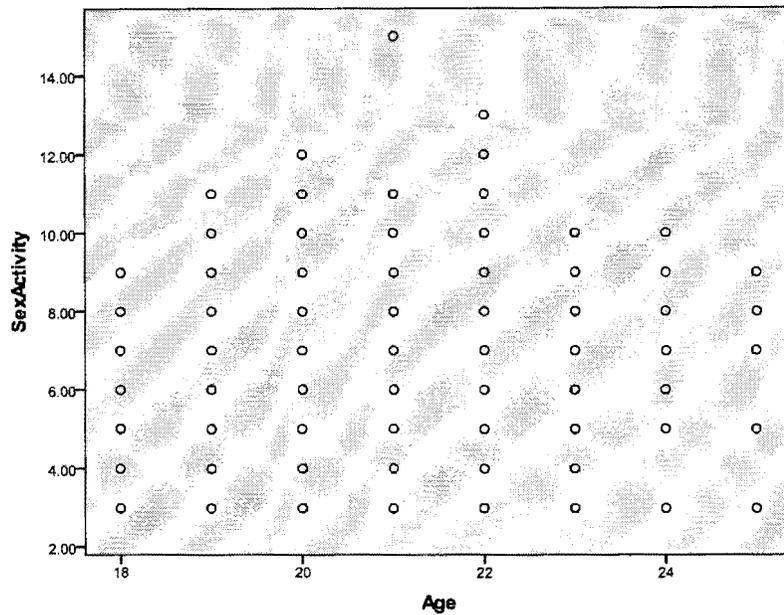


Figure 5. A scatterplot of sexual activity according to age

Model Testing

Our first set of mediational analyses examined the role of body image as a mediator of the relation between sexual attitudes and sexual activity. In our direct effects model, linear regression results indicated that sexual attitudes and sexual activity were linearly related such that as liberal sexual attitudes increased, sexual activity increased ($\beta = .43, p < .05$). Sexual attitudes accounted for approximately 18% of the variance in sexual activity ($R^2 = .18, p < .01$). As hypothesized, women who had more conservative sexual attitudes tended to have lower sexual activity scores (hypothesis 1). Conversely, women who had more liberal sexual attitudes tended to have higher rates of sexual activity. See Figure 6 for a scatterplot depicting the results from this linear regression analysis.

The full model added the potential mediator, body image, to the model. Multiple regression results indicated significant relationships between sexual attitudes and body image ($\beta = -.13, p < .05; R^2 = .02, p < .05$) and between body image and sexual activity (β

= .17, $p < .05$; $R^2 = .03$, $p < .01$). In addition, the direct effect of sexual attitudes on sexual activity remained strong and significant ($\beta = -.41$, $p < .05$; $R^2 = .20$, $p < .01$).

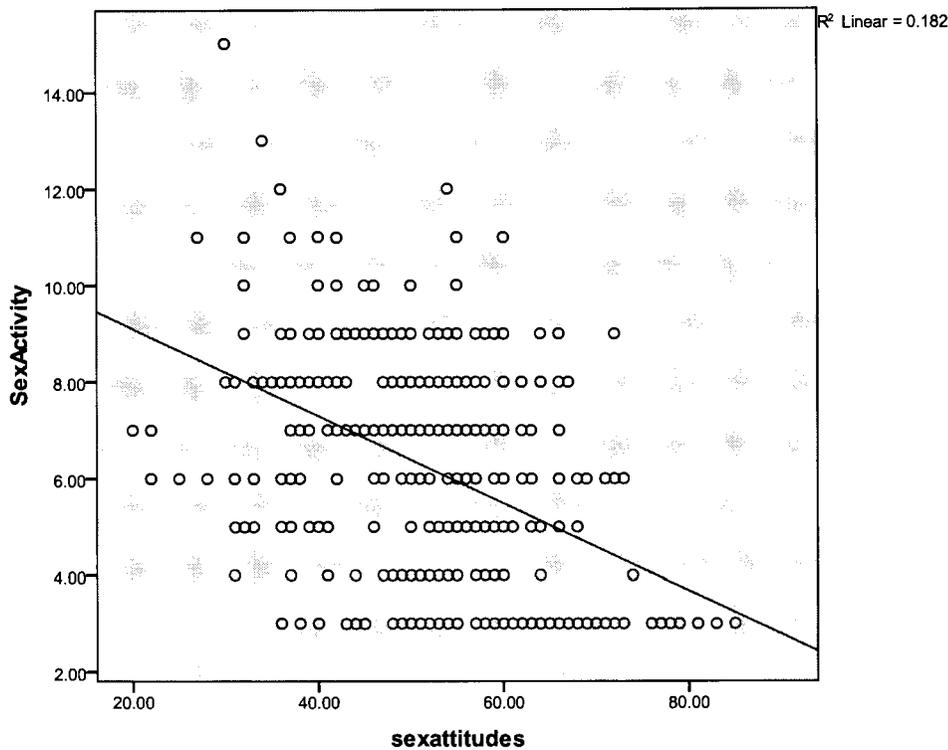


Figure 6. A scatterplot and regression line for analysis of sexual attitudes and sexual activity

The mediation model removed the direct path between sexual attitudes and sexual activity but included the indirect pathways. All indirect paths remained significant. Thus, while body image did not appear to mediate the relationship between sexual attitudes and sexual activity, the significant links between all three variables indicated evidence of indirect effects. As suggested by hypothesis 2, this means that more liberal sexual attitudes led to higher body image which, in turn, led to increased sexual activity. Also, more conservative sexual attitudes led to lower body image which, in turn, led to decreased sexual activity. See Table 3 and Figure 1 for a summary and depiction of results from this set of mediational analyses.

Table 3

Regression Results of the Mediating Effects of Body Image on the Relation between Sexual Attitudes and Sexual Activity

Model	B	Std. Error	β
Model 1			
Outcome: Sexual Activity			
Predictor: Sexual Attitudes	-.09	.01	-.43*
Model 2			
Outcome: Body Image			
Predictor: Sexual Attitudes	-.08	.03	-.13*
Model 3			
Outcome: Sexual Activity			
Predictor: Body Image	.06	.02	.17*
Model 4			
Outcome: Sexual Activity			
Predictor: Sexual Attitudes	-.09	.01	-.41*
Mediator: Body Image	.04	.02	.12*

Note. * $p < .05$.

Our second set of mediational analyses investigated the role of sexual attitudes as a mediator in the relation between body image and sexual activity. Linear regression results from our direct effects model indicated that body image and sexual activity were linearly related such that as body image satisfaction increased, sexual activity also increased ($\beta = .17, p < .05$). Body image accounted for approximately 3% of the variance in sexual activity ($R^2 = .03, p < .01$). Thus, as hypothesized, women who had higher body image satisfaction tended to have more frequent engagement in sexual activity (hypothesis 3). See figure 7 for a scatterplot depicting the results from this linear regression analysis.

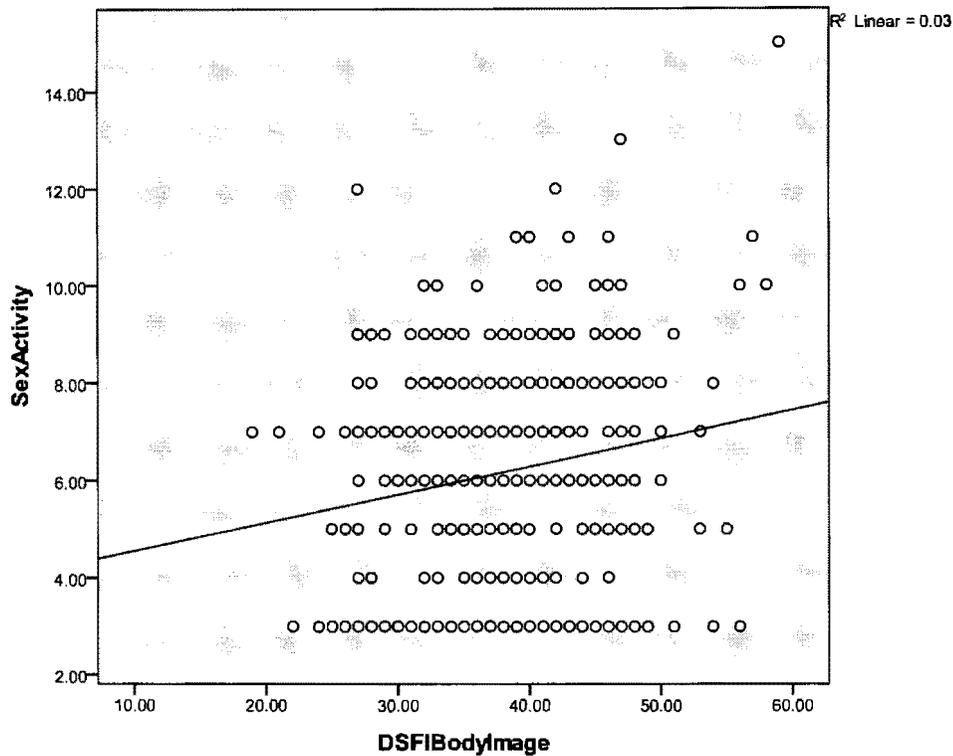


Figure 7. A scatterplot and regression line for analysis of body image and sexual activity

The full model added the potential mediator, sexual attitudes, to the model. Results from multiple regression analysis showed significant relationships between body image and sexual attitudes ($\beta = -.13, p < .05; R^2 = .02, p < .05$) and between sexual attitudes and sexual activity ($\beta = -.43, p < .05; R^2 = .18, p < .01$). Additionally, the direct effect remained significant albeit reduced in value ($\beta = .12, p < .05; R^2 = .20, p < .01$).

The mediation model removed the direct path between body image and sexual activity but included the indirect pathways. All indirect paths remained significant. Therefore, while sexual attitudes did not appear to fully mediate the relationship between body image and sexual activity, the significant links between all three variables indicated evidence of partial mediation and a process of indirect effects. As suggested by hypothesis 4, this means that body image satisfaction led to more liberal sexual attitudes which, in

turn, led to increased sexual activity. Conversely, body image dissatisfaction led to more conservative sexual attitudes which, in turn, led to decreased sexual activity. See Table 4 and Figure 2 for a summary and depiction of results from the second set of mediational analyses.

Table 4

Regression Results of the Mediating Effects of Sexual Attitudes on the Relation between Body Image and Sexual Activity

Model	B	Std. Error	β
Model 1			
Outcome: Sexual Activity Predictor: Body Image	.06	.02	.17*
Model 2			
Outcome: Sexual Attitudes Predictor: Body Image	-.20	.08	-.13*
Model 3			
Outcome: Sexual Activity Predictor: Sexual Attitudes	-.09	.01	-.43*
Model 4			
Outcome: Sexual Activity Predictor: Body Image Mediator: Sexual Attitudes	.04 -.09	.02 .01	.12* -.41*

Note. * $p < .05$.

DISCUSSION

Research indicates that sexual difficulties, such as problems with performance, frequency, desire, and satisfaction, have been increasingly reported in the U.S. population (Purdon & Holdaway, 2006; Robins et al., 1984). Such sexual difficulties have been linked to other problems, including decreased happiness (Laumann et al., 1995), poorer self-esteem and well-being (Heiman, 2002), relational distress (Pridal & LoPiccolo, 2000), and decreased sexual frequency (Masters & Johnson, 1970). Because of the increasing prevalence of sexual difficulties and the potential problems linked with such difficulties, we must consider factors associated with sexual functioning among women. For example, research has identified body image and sexual attitudes as significant in predicting sexual activity (Faith & Schare, 1993). However, little is known regarding the direction of effects between these three variables. Therefore, in the present study, we assessed whether sexual attitudes or body image served as a mediator in predicting sexual activity among a sample of emerging adult women.

It is important to uncover the relations among these constructs in a sample of emerging adult women for multiple reasons. First, women's bodies are objectified more so than men's in western cultures (Fredrickson & Roberts, 1997). This objectification, together with internalized sexism, may lead to cognitive removal or distraction from one's sexual experience (Masters & Johnson, 1970; Walen, 1980). Second, women's bodies are subject to objectification, and thus women have been shown to experience high rates of body image dissatisfaction (Klemchuck et al., 1990), which puts them at risk for other problems such as eating disorders, depression, and sexual difficulties (Fredrickson & Roberts, 1997; McKinley & Hyde, 1996; Murnen & Smolak, 2009; Smolak & Murnen,

2007). Third, research on sexual attitudes has demonstrated that college women are more likely than men to have conservative as opposed to liberal sexual attitudes (Faith & Schare, 1993), meaning that they are less open or comfortable than men with a wide range of sexual ideas. This finding is most likely related to the strength of patriarchal societal messages meant to restrict and subordinate women and their bodies. Sexual attitudes also proved to be the best predictor of sexual activity for women in this age group (Faith & Schare, 1993). Finally, research has shown that higher rates of women (43%) report sexual problems in comparison to men (31%) (Laumann et al., 1999). Therefore, emerging adult women may be particularly susceptible to developing sexual difficulties and the problems often associated with such difficulties.

Summary of Findings

Results of the present study indicated that women who maintain more conservative sexual attitudes tend to engage in less sexual activity in comparison to women who maintain more liberal sexual attitudes, who report greater levels of sexual activity. This finding parallels previous research indicating that liberal sexual attitudes are associated with more confidence (Nobre et al., 2003), less fear and shame (Rosen & Leiblum, 1995), and more frequent engagement in sexual activity (Faith & Schare, 1993). As shame intersects and connects multiple parts of a woman's identity, less shame may open up avenues for women to derive positive meaning not only from their bodies and sexuality, but also from their roles as partners, mothers, and contributing members of society (Brown, 2004). Therefore, sexual attitudes that are more liberal and accepting have the power to facilitate positive sexual experiences as well as overall well-being for women.

Conversely, more conservative sexual attitudes have been associated with less sexual activity (Faith & Schare, 1993) and higher rates of sexual problems (Nobre et al., 2003). More specifically, conservative sexual attitudes relating to the role of affection in sex (i.e., believing love is necessary for “good” sex) (Tevlin & Leiblum, 1983), the fear of losing control (Hawton, 1985; Kaplan, 1979; Lazarus, 1988; LoPiccolo & Friedman, 1988; Rosen & Leiblum, 1995), and the fear of social rejection and/or criticism (Nobre, et al., 2003) are among the most commonly reported causes of sexual difficulties for women. These attitudes are related to the sexual double standard (i.e., permissive and demanding sexual expectations for men and repressive expectations for women), which has also been found to significantly contribute to sexual difficulties for women (Hawton, 1985). This double standard was created within the system of patriarchy, using societal messages to spread conflicting and objectifying ideas (e.g., the value of virtue versus the constant sexualization of women’s bodies) regarding women’s bodies and sexuality.

Conservative, rigid attitudes regarding sexuality can contribute to a negative self schema. For example, conservative attitudes are often restrictive of sexual experiences (e.g., love is necessary for “good” sex). Therefore, when sexual situations (e.g., casual sex) fail to meet certain conservative expectations, a negative view about the situation (e.g., my sex life is unfulfilling) and oneself (e.g., I am unworthy of a fulfilling sex life) for “failing” to meet those expectations can develop. A negative self-schema, in turn, can lead to anxiety-evoking distraction, or spectating, before and/or during sexual activity, thereby reducing sexual enjoyment and frequency (Barlow, 1986; Kaplan, 1974; Masters & Johnson, 1970). Feelings of shame, guilt, and the desire to hide or escape can often accompany spectating, keeping women from fully engaging in or enjoying ongoing

sexual activity. In this way, conservative sexual attitudes, which provide more opportunity for spectating to occur, have the power to influence a woman's sexual experience in a negative way. This spectating, or self-focused evaluation of one's own body and sexual adequacy, also supports the connection between our second variable, body image, and sexual activity.

Additionally, results of the present study indicated that higher body image satisfaction was related to more frequent engagement in sexual activity. Previous research supports the connection between positive views of the body and higher sexual esteem and assertiveness in emerging adult samples of white, heterosexual women (Wiederman, 2000; Wiederman & Hurst, 1998). As body image and self-esteem are highly connected (Lerner et al., 1973; Padin et al., 1981), it is likely that body image satisfaction also contributes to more feelings of self-worth for women. Previous research has also found that women with higher body image view the physical aspects of sex as more appealing (Goldenberg et al., 2000), report having sex, achieving orgasm, and initiating sex more frequently, and report experiencing greater comfort when exposing their bodies during sex and when trying new sexual activities (Ackard et al., 2000). As a result, it is reasonable to assume that if a woman feels good about her body, she is more likely to enjoy her body during sexual activity. Women who report having more extensive sexual experience also rate their bodies and attributes more positively than women with less sexual experience (MacCorquodale & DeLamater, 1979). Therefore, a woman's positive body image can facilitate more enjoyable sexual experiences and vice versa.

In contrast, the present study found that body image dissatisfaction contributed to less sexual frequency. This finding is also supported by previous research (Faith & Schare,

1993; Murstein & Holden, 1979; Trapnell et al., 1997). For example, emerging adult women with greater body image self-consciousness are less likely to experience orgasm or satisfaction with sexual activity than women with less body image self-consciousness (Dove & Wiederman, 2000; Fredrickson & Roberts, 1997). Furthermore, women with a negative self-evaluation also report more fears regarding sex and feelings of less control in sexual relationships (Wingwood et al., 2002).

Self-evaluation and body image are closely connected in their impact on sexual activity. Therefore, according to our findings, it can be assumed that body image satisfaction and a positive self-evaluation work in tandem to positively affect sexual activity while body image dissatisfaction attributes to a negative self-evaluation and likely hinders the positive aspects of sexual activity a woman might experience. It is important to address that women's self-evaluations originate with what she has come to expect of her body after internalizing societal objectification and unrealistic expectations. If self-evaluation, which is part of the spectating process, is negatively biased, a negative body image has the potential to lead to sexual difficulties (Andersen & LeGrand, 1991). In fact, the more unattractive a woman finds her body, the more likely she is to engage in strategies to compensate for it during sex (Purdon & Telford, 1999). For instance, if she finds a certain part of her body unattractive, she may modify her behavior accordingly (e.g., covering that portion of her body or preferring a certain sexual position that does not highlight it). This compensation for the parts of her body that a woman feels self-conscious about often requires a great deal of self-monitoring. When a woman is in this cognitive state of monitoring, she can lose connection with her body, making her less able to fully participate in sexual activity. In other words, she is more focused on the way her body

looks than on sexual pleasure or the connection with her partner. This information is unfortunate given that research has shown that over one-third of emerging adult women experience body image self-consciousness during physical intimacy at least some of the time (Wiederman, 2000).

The previously discussed results are interesting because they suggest that both body image and sexual attitudes have a significant direct impact on white, heterosexual women's sexual activity. However, neither body image nor sexual attitudes fully explained or mediated the effect of the other on women's sexual activity. Instead, two patterns of indirect effects emerged and the complex nature of a process including sexual attitudes, body image, and sexual activity was determined for the first time.

First, our analyses showed that sexual attitudes affected body image which then affected sexual activity. This means that more liberal sexual attitudes led to higher body image which, in turn, led to increased sexual activity. On the other hand, we also found that more conservative sexual attitudes led to lower body image, which, in turn, led to decreased sexual activity. This finding is supported by research separately linking sexual attitudes with body image and body image with sexual activity. For instance, more permissive (liberal) attitudes are connected to perceiving oneself as more attractive (MacCorquodale & DeLamatar, 1979). Following from feelings of body image satisfaction, women have been shown to be more sexually assertive (Wiederman, 2000), initiate sex more frequently, and report more comfort with sexual activities (Ackard et al., 2000). However, the additive models provided by previous research are not enough to capture the complexity of how these variables interact. As our findings suggest, how a woman thinks about sex influences how she thinks about her body which then determines how she

experiences sexual activity. This process model uncovered in the present study is unique and serves as a more comprehensive foundation on which to build future research.

There is ample theory to support the connections among these variables. To begin, it is important to be cognizant of where conservative sexual ideas stem from. That is, they often originate from sexist, racist, and heterosexist messages that exist within a patriarchal culture. Women's cognitions and beliefs cannot be separated from the contexts in which they exist. Social norms and expectations regarding sexuality are often more conservative, at least for white, heterosexual women. In fact, racial and sexual minority statuses are typically not addressed in either societal domains or in research on sexual attitudes, body image, and sexual activity; instead, they are simply assumed to be similar to the dominant ideas produced using research on white, heterosexual women. Therefore, it is necessary to understand previous findings in terms of the target sample. That is, previous research can only be used to make assumptions regarding white, heterosexual women. Nonetheless, sexual conservatism seems to alter women's beliefs about physical appearance (Heiman & LoPiccolo, 1988). For example, social norms and expectations regarding at what age sex is most appropriate (e.g., sex is only appropriate for women under 40 years old) can lead women to believe that they are undesirable or unattractive after a certain age (Heiman & LoPiccolo, 1988). Furthermore, individuals who report less comfort with various elements of sexual activity (i.e. are more conservative) also have poorer views of their bodies (Ackard et al., 2000; Faith & Schare, 1993; Trapnell et al., 1997; Wiederman, 2000).

The process which then leads to sexual activity can be explained using cognitive theory (Beck, 1996) which involves two levels of beliefs or attitudes: unconditional (core ideas about the self, others, and the world) and conditional (intermediate ideas resulting

from learning or experience which stipulate conditions for the activation of unconditional beliefs) (Nobre & Pinto-Gouveia, 2006a). Again, the development of these beliefs cannot be separated from patriarchal influence, but is rather established according to a level of agreement or disagreement with societal messages on women's sexuality. Sexual attitudes can often be explained as conditional beliefs and can result in the activation of an unconditional belief about one's body. For example, an unconditional belief about one's body (e.g., "my body failed") can be activated when a sexual situation (e.g., occasional lack of orgasm) fulfills the conditions stipulated by a conditional belief (e.g., "a woman who fails to orgasm during sexual activity is a complete failure"). Therefore, it only makes sense that if attitudes are more conservative and body image satisfaction is low, greater anxiety with regard to those thoughts leads to sexual difficulties and lower sexual satisfaction for women (Purdon & Holdaway, 2006).

Second, the present study produced evidence suggesting that body image impacts sexual attitudes, which affect sexual activity. This means that body image satisfaction led to more liberal sexual attitudes which, in turn, led to increased sexual activity. This finding is quite revolutionary in that women reported the ability to attain a certain level of body image satisfaction, even in a culture where women's bodies can never meet unrealistic societal standards and where women are not necessarily supposed to feel any comfort or agency with sexual activity. Further, it makes sense that if a woman is able to somehow stand up to unrealistic standards and feel good about her body to some extent, she may also find it easier to be accepting of a wide range of sexual ideas and feel more free to express those ideas through sexual activity.

Conversely, body image dissatisfaction led to more conservative sexual attitudes which, in turn, led to decreased sexual activity. This is supported by previous research which has shown that emerging adults with a more positive body image expressed more liberal attitudes towards sex and reported increased sexual frequency, while poor body image was associated with more conservative sexual attitudes and avoidance of sexual activities (Faith & Schare, 1993; Wiederman & Hurst, 1998). Previous research also demonstrates that women who are more oriented toward their appearance, or more influenced by body image, endorse societal views regarding gender and sexuality, or the sexual double standard (Gillen et al., 2006), which has been linked to sexual difficulties. However, these previous studies had only established these connections separately, testing an additive model. Using our results, it becomes clear that when a woman is trapped by the dissatisfaction originating from objectification and degradation of her body, this limits her views regarding her sexual role, agency, acceptance, and satisfaction. These gendered and repressive views then translate into conflict, feelings of shame and/or guilt, and thereby limit choices regarding sexual activity.

Because poor body image often results from failing to meet unrealistic standards of the thin ideal for women, it is likely that the more a woman succumbs to negative beliefs about her body, the more she will also be influenced by societal messages which can be restrictive of sexuality. These views, in combination with body image dissatisfaction, may end up limiting sexual frequency and satisfaction. In other words, the degree to which women believe or internalize societal messages has implications for how they view their bodies, sexual experiences, and relationships. Additionally, as body image and sexual attitudes have been related to obtaining self-worth through sexual experiences (Goldenberg

et al., 2000), negative body image and conservative sexual attitudes can thereby affect a woman's self-concept negatively. These connections remind us once again that though body image and sexual attitudes are both important factors that influence sexual activity, each influence alone is not enough to explain the complex cognitive process that leads to decisions regarding sexual activity. In fact, because we found that the direction between sexual attitudes and body image was significant either way in predicting sexual activity, it is possible that a more circular process among all three variables exists.

Limitations and Future Directions

Though the present study begins to address the direction of effects of body image and sexual attitudes in predicting sexual activity, the results are limited by the specific sample used, location, and the research procedure. First, the present study focused on an emerging adult, primarily white, primarily straight, college sample of women. Future research in this area would benefit from more diverse samples including studies on both men and women with a greater range of ages, ethnicities, sexual orientations, and socioeconomic statuses because gender, age, race, culture, living circumstances and education could prove to be significant influences on the development of sexual attitudes, body image, and sexual activity. For example, societal messages regarding body image and sexuality vary depending on a person's position in society. Therefore, a middle-aged black woman who identifies as gay will receive and internalize messages in a unique and different way according to her multiple minority statuses (i.e., she will contend with a combination of internalized sexism, racism, and heterosexism). Additionally, emerging adults who are not in college do not live in the same environment as college students, where men and women are in close proximity to possible sexual partners and are often

unsupervised. Therefore, they may not have the same experiences and feelings related to sex and body image that college students do. Future research should draw diverse samples from the general population for these reasons.

Second, studies performed in this area of research should be completed in a variety of locations both within the United States and internationally to more fully represent different cultural impacts on sexual attitudes, body image, and sexual activity. The present study's location was a geographical area typically known for more conservative attitudes, which undoubtedly impact the beliefs and views of the participants who responded. In contrast, liberal sexual attitudes might be more commonly accepted and even encouraged in other locations, which could alter the processes seen in this study with both body image and sexual frequency. Additionally, rules and ideas surrounding sex and gender tend to be culturally bound. For instance, religious beliefs regarding procreation as the primary function of sex or cultural practices around gender roles and sex within an arranged marriage could impact the results of this research. Thus, we encourage researchers to replicate our study with emerging adult women in different geographical locations.

Third, as sexual relationships are not individual behaviors, relationship status and the availability of partners should be taken into consideration when researching the connections among sexual attitudes, body image, and sexual activity in the future. However, we note that previous research in this area has not addressed this limitation. In general, research on sexuality and relationships has focused primarily on variables such as attachment (Birnbau, Reis, Mikulincer, Gillath, & Orpaz, 2006), differences in perceived threats (e.g., physical versus relational) (Burris & Rempel, 2008) and sexual risk-taking behavior (Cooper, 2010) based on relationship context. Previous research has also

addressed how relationship quality varies based on sexual orientation (Kurdek, 2008) and relationship equity over time (Walster, Walster, & Traupmann, 1978). As we specifically focus on sexual attitudes and body image, these variables are beyond the scope of the present study. Likewise, sexual attitudes and body image, as cognitive processes, have not been shown to be highly dependent on relationship status as of yet. Though it has been suggested that relationship success may be viewed as related to being attractive and that relationship contingency may be connected to body shame (Sanchez, Good, Kwang, & Saltzman, 2008), these connections have yet to be thoroughly examined in research.

Another limitation could be the use of self-reports in the present study. It is possible that women either overestimated or underestimated their sexual attitudes and activity for reasons regarding feelings about “norms” or due to feelings of shame around their actual sexual experience. While self-reports cannot be completely objective in nature, they do offer female participants anonymity as a safeguard against potential bias or concern about what others, especially men, might think. Also, the use of an online survey to gather data for the present study presents with a possible selection bias. It is likely that only certain women (e.g., women that were more open to providing opinions on sexuality and their bodies) were willing to participate.

The present study’s measure of sexual activity also is limited by some underlying assumptions regarding satisfaction and sexual frequency. For example, higher rates of sexual activity in the present study were associated with more positive body image and liberal sexual attitudes while lower rates of sexual activity were associated with more negative body image and repressive sexual attitudes. This assumes that higher rates of sexual activity are “good” and that lower rates of sexual activity are “bad,” which is both

highly suggestive of the acceptance and value given to women's sexual assertiveness in more recent times and is often not the case for some women. Also, the present study did not look at the degree of practicing safe sex, so it cannot be assumed that more frequent sex will have positive outcomes for women in our study.

Lastly, other variables of interest as identified in the literature, such as desire, sexual satisfaction, religious affiliation, feminist beliefs, family of origin, type of sex education, self-esteem, and level of disordered eating were not addressed in the present study. Each of these variables could affect the relationship between sexual attitudes, body image, and sexual activity in unique and combined ways. For example, level of desire and sexual satisfaction would certainly influence sexual frequency whereas religious affiliation, feminist beliefs, family of origin, and type of sex education would more likely impact sexual attitudes regarding how a woman makes sense of and internalizes societal messages in combination with information learned in these areas. Likewise, self-esteem and disordered eating tend to be highly associated with body image. We suggest that future research incorporate these variables in their analyses.

Contributions and Implications

Despite limitations, this study contributes to the field in several important ways. To begin, our analyses provided information that attempts to fill the large gap in the literature involving the direction of effects of body image and sexual attitudes in predicting sexual activity. This is especially significant due to the fact that previous research has only addressed the impact of sexual attitudes and body image on sexual activity separately, as an additive model. Therefore, the present study is the first to suggest a process explanation for the connections among body image, sexual attitudes, and sexual activity. The present study

also contributes to the literature through the use of a more inclusive definition of sexual activity. This is unique as previous research in this area has often overlooked oral sex and anal sex in their measurements of sexual activity.

Further, this study contributes to the research through the use of a large sample of emerging adult women, an age group that is particularly susceptible to both body image problems and sexual difficulties. As the sample was also primarily white, straight, and most likely influenced by the conservative area in which they attended college, it is important that these results are used to understand this particular cross-section of the female population. Foundational research (Masters & Johnson, 1970) on sexuality was completed first using samples of adult men and later branched out to research on adult, white, heterosexual women that was not feminist informed. Therefore, not only does the present study provide an important addition to literature on women's sexuality in general, but does so by using objectification theory and a critique of societal messages linked to patriarchy. This is particularly beneficial, as the results of our work serve as a reminder that gender, age, race, culture, sexual orientation, and socioeconomic status have not been fully addressed when determining the factors impacting the sexual identities and lives of women. It is imperative for future research to consider how these variables uniquely intersect in determining the degree to which women maintain satisfying and healthy sexual lives. As a topic that has not been adequately researched or discussed, it is important to address the effect that patriarchal societal messages have on emerging adult women's attitudes, self-esteem and worth, and sexual relationships. Additionally, future research should address the implications that sexual attitudes, body image, and sexual activity as a process have for sexual relationships. For example, it is important to examine how each factor varies

according to relationship context, satisfaction, etc. Future research should also consider how individuals may use sexual relationships for validation or affirmation and determine how those relationships impact self-esteem and self-worth.

The findings from the present study can be used as evidence that women's sexuality is a complex and comprehensive process, highly impacted by the social contexts that affect sexual attitudes and body image. As higher rates of conservative beliefs, negative body image, and lack of information regarding sexuality have been associated with higher rates of sexual difficulties (Nobre et al., 2003), a comprehensive way to address a combination of all of these factors is necessary. Likewise, future investigations should continue to take a more comprehensive approach when assessing which factors predict sexual activity. Because both sexual attitudes and body image strongly affect the frequency of sexual activity, prevention and intervention work for sexual difficulties should focus on how both factors work together to influence women's sexual experiences. For example, it would be important to not only discuss sexual attitudes and body image, but also to address where those beliefs came from and recognize the unique and personal significance they hold for each and every woman. In this way, clinicians, researchers, and educators can work to help women understand the connection between societal messages and sexual activity.

Because the influence of female objectification begins at an early age and increases as women reach adulthood, sex education classes should incorporate knowledge of societal messages regarding body image and sex (e.g., a critique of how patriarchy, sexism, racism, heterosexism, etc. impact our attitudes, beliefs, self-concept, and behavior) and work to dispel myths or ideas that might lead to negative feelings about the body, unrealistic fears or beliefs, and/or risky sexual behaviors such as unprotected sex. Young women should be

prepared to cope with and understand the impact of societal messages which contribute to restrictive attitudes, body image dissatisfaction, and sexual difficulties.

Professionals and lay people alike can only become more cognizant of facilitating open space for discussion and education in eliciting more positive views of women's bodies and selves. They can do so by first addressing how multiple factors such as sexual attitudes and body image came to be developed, creating awareness regarding the large and incessant impact that societal messages have on women's self-concept and worth by naming patriarchy and the sexism, racism, and heterosexism that the system upholds. Facilitating a new understanding of how women's beliefs are shaped in this way through open dialogue can then open up space for women to begin to stand up to objectification and restrictive messages in small ways. For example, a woman may be able to catch and stop distracting negative thoughts about her body and may be able to make more assertive choices regarding sexual relationships if shame and guilt are reduced through this dialogue.

However, maintaining healthy body image, sexual attitudes, and activity are likely to be challenging for emerging adult women. Specifically, this age group is inundated with messages from the media about body expectations and sexuality that objectifies women. Women are particularly subject to internalizing a thin-ideal, even with high levels of media-awareness and feminist beliefs. Women who are better able to resist such gender norms tend to have positive health outcomes (e.g., increased sexual functioning and safer sex practices) and well-being (e.g., relationship and sexual satisfaction) (Schick, Zucker, and Bay-Cheng, 2008). These outcomes can either directly or indirectly impact women's health and their family and couple lives through the development and maintenance of emotional and sexual relationships. Thus, therapists, researchers, and educators must be

vigilantly aware of and intentionally focus on reducing the effects of women's body and sexual objectification as one step toward improving their overall health and well-being in family, couple, or dating contexts. They can do so by collaborating to ensure that their own education and training is feminist and social justice based and then by practicing the translation of those ideas into therapy, research, and teaching.

The present study makes it increasingly clear that addressing sexual attitudes, body image, and sexuality in a way that is conscious of women's unique position in society needs to be a priority. In regards to clinical implications, our findings suggest that both body image and sexual attitudes (along with other variables) are useful when working with issues of sexuality. As these factors play out in a process of indirect effects, it would be important to tease out that process for each unique client beginning with how their sexual attitudes and body image were developed and shaped by objectification, social norms and messages, determining how her body image and sexual attitudes impact one another, and then determining how those interactions translate into sexual behavior, agency, and worth. This process could be visually mapped in therapy and could benefit both individuals and couples. Specifically, the more positive a woman is able to feel about her body (the more able she is to recognize and stand up to restrictive societal messages) and the more open she becomes to a variety of sexual ideas that express who she is rather than who she "should be," the more agency, satisfaction, and connection she can experience with a sexual partner.

In conclusion, the present study found that sexual attitudes and body image directly affected sexual activity. Additionally, two separate processes of indirect effects were found, showing that sexual attitudes influenced body image which then affected sexual

activity, and that body image influenced sexual attitudes which then affected sexual activity. These findings suggest evidence of a comprehensive and complex process of factors influencing sexual activity. Ultimately, this process explanation could be the foundation of more revolutionary work on women's sexuality that is considerate of their often subordinated position in Western society, paving the way for work advocating women's rights to health and well-being to be completed throughout the world.

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APPENDIX A

Sexual Attitudes Scale (Derogatis & Melisaratos, 1979; Fisher et al., 1988; Nobre & Pinto-Gouveia, 2000)

Please circle the answer that best indicates to what extent you agree.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1) Sex prior to a committed relationship/marriage is beneficial to later committed relationships/marriage.	1	2	3	4	5
2) Oral or anal sex can be as pleasurable as intercourse.	1	2	3	4	5
3) Masturbation is a perfectly normal, healthy sexual behavior.	1	2	3	4	5
4) Sex outside of a committed relationship/marriage inevitably leads to serious problems and great difficulty in the relationship/marriage.	1	2	3	4	5
5) Couples that have sex before a committed relationship/marriage usually regret it later on.	1	2	3	4	5
6) Masturbation is wrong.	1	2	3	4	5
7) Group sex is a bizarre and disgusting idea.	1	2	3	4	5
8) Sexual affairs outside of a committed relationship/marriage can make people better partners.	1	2	3	4	5
9) Couples should experiment with various positions of intercourse to enhance their sexual experiences.	1	2	3	4	5
10) Oral and anal sex are not within the range of normal sexuality.	1	2	3	4	5

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
11) Any sexual behavior between two consenting adults should be viewed as normal.	1	2	3	4	5
12) Love and affection from a partner are necessary for good sex.	1	2	3	4	5
13) I personally find that thinking about engaging in sex is arousing.	1	2	3	4	5
14) There is just one acceptable way of having sexual intercourse (missionary position).	1	2	3	4	5
15) Sex in a committed/married couple is the only normal type of sexual behavior.	1	2	3	4	5
16) Engaging in group sex is an entertaining idea.	1	2	3	4	5
17) I do not enjoy daydreaming about sexual matters.	1	2	3	4	5
18) A person does not need love and affection to have good sex.	1	2	3	4	5

APPENDIX B

DSFI Body Image Subscale (Derogatis, 1978)

Please indicate to what degree each of the following statements is true of you.

		Not At All				Extremely
1) I am less attractive than I would like to be.	0	1	2	3	4	5
2) I am too fat.	0	1	2	3	4	5
3) I enjoy being seen in a bathing suit.	0	1	2	3	4	5
4) I am too thin.	0	1	2	3	4	5
5) I would be embarrassed to be seen nude by a sexual partner.	0	1	2	3	4	5
6) I am too short.	0	1	2	3	4	5
7) There are parts of my body I don't like at all.	0	1	2	3	4	5
8) I am too tall.	0	1	2	3	4	5
9) I have too much body hair.	0	1	2	3	4	5
10) My face is attractive.	0	1	2	3	4	5
11) I have a shapely and well-proportioned body.	0	1	2	3	4	5
12) I have attractive breasts.	0	1	2	3	4	5
13) Sexual partners would find my body attractive.	0	1	2	3	4	5
14) I have attractive legs.	0	1	2	3	4	5
15) I am pleased with the way my vagina looks.	0	1	2	3	4	5

APPENDIX C

Frequency of Sexual Activity (Ackard, Kearney-Cooke, & Peterson, 2000)

Please circle the answer that represents how often, on average, you have engaged in the following behaviors during the past year.

1 = never

2 = a few times a year

3 = a few times a month

4 = a few times a week

5 = daily

- | | | | | | |
|--|---|---|---|---|---|
| 1. How often do you have sexual intercourse? | 1 | 2 | 3 | 4 | 5 |
| 2. How often do you have anal sex? | 1 | 2 | 3 | 4 | 5 |
| 3. How often do you have oral sex? | 1 | 2 | 3 | 4 | 5 |

APPENDIX D

Dear Student,

My name is Jessica Lemer, and I am a graduate student in the Department of Child Development and Family Science. Along with faculty members, Beth Salafia and Kristen Benson, we are administering an online research survey that examines the links among body image, sexual activity, and sexual attitudes.

The survey is available through a secure web-based site and will take approximately 20-30 minutes to complete. All participants must be English-speaking college females who are at least 18 years old. Participation is completely voluntary, and all responses will be kept confidential.

All participants will be entered in a prize drawing for a flatscreen LCD TV and 3 \$50 giftcards (NDSU bookstore, Target, or local restaurants). To participate, please click on the following link: <http://thinktank.groupsystems.com/opinio/s?s=5841>.

For more information, please contact me by email (Jessica.L.Lemer@ndsu.edu). Thank you very much for your time!

Sincerely,

Jessica Lemer
Dr. Beth Salafia
Kristen Benson



APPENDIX E



**College females (18+) are invited
to participate in a research study
about body image, sexual
activity and sexual attitudes!**

Please carefully read the following information:

- You will be asked to complete several **online** questionnaires that ask questions about body image, sexual activity, and sexual attitudes.
- The surveys will take about **30 minutes** to complete.
- Students completing the surveys will be entered in a **prize drawing**.
- Participation is completely voluntary.
- All responses will be kept confidential.
- If interested, signature of consent is required.
- To participate or for more information, please email **Jessica.L.Lemer@ndsu.edu**

This study is being conducted by faculty members Beth Blodgett Salafia and Kristen Benson and graduate students Jessica Lemer and Amanda Bulat

Department of Child Development and Family Science
North Dakota State University

APPENDIX F

INFORMED CONSENT

Title of research study: Body Image and Sexual Activity Study (BISA)

This study is being conducted by: Beth Salafia and Kristen Benson, assistant professors in the Department of Child Development and Family Science at North Dakota State University

Why am I being asked to take part in this research study?

You are invited to participate in a research study to obtain information about body image, sexual activity, and sexual attitudes. All English-speaking college females who are at least 18 years old are invited to participate.

What is the reason for doing this study?

The purpose of the BISA study is to obtain information about some of the factors associated with body image, sexual activity, and sexual attitudes. Often, body image and certain beliefs and attitudes about sexuality affect the amount and perceived satisfaction of sexual activity. Hopefully, the information gathered in this study will allow researchers to understand the important links between body image, sexual activity, and sexual attitudes.

If you agree to take part in this study, you will be asked to complete an online series of surveys that ask questions about body image, sexual activity, and sexual attitudes.

Where is the study going to take place and how long will it take?

The surveys will be available online for you to complete at your convenience and will take about 20 to 30 minutes to finish.

What are the risks and discomforts?

We do not know of any significant risks from filling out these surveys. However, it is not possible to identify all possible risks in research procedures, but the researchers have taken reasonable safeguards to minimize any known risks to the participant and minimize the potential for emotional distress as much as possible. There is a small chance that the questions that you will be asked may remind you of memories or past situations that could make you feel uncomfortable. You are free to skip any item or items and can stop filling out the surveys without penalty or hard feelings. If you experience significant distress while completing the surveys, please contact the counseling center at your university: NDSU Counseling Center (701) 231-7671, MSUM Counseling and Personal Growth Center (218) 477-2227, or Concordia College Counseling Center (218) 299-3514. If you would like additional referrals for counseling, please contact Beth Salafia or Kristen Benson.

What are the benefits to me? What are the benefits to other people?

Participating in this study may help you learn more about yourself. However, you may not get any benefit from being in this study. The findings of this study will allow

researchers and practitioners to know more about the factors associated both positive and negative body image and sexual attitudes and how they may affect sexual activity.

Do I have to take part in the study? What are the alternatives to being in this research study?

Your participation in this research is your choice. If you decide to participate in the study, you may change your mind and stop participating at any time without penalty or loss of benefits to which you are entitled. Your decision whether or not to participate will not affect your present or future relationship with North Dakota State University.

Who will see the information that I give?

This study is anonymous. That means that no one, not even members of the research team, will know that the information you give comes from you. Your information will be combined with information from other people in the study. When we write about the study, we will write only about the combined information, and no one will be able to know what your information is. When findings from the study are reported, only general information (e.g., gender and age) will be used.

Will I receive compensation for taking part in this study?

To thank you for your time and effort in this project, you will have the opportunity to enter your name into a drawing for one of several prizes, including a flatscreen LCD TV and three \$50 giftcards (NDSU bookstore, Target, and local restaurants). The online surveys have a link connecting you to another survey where you will provide your name and contact information if you wish to be entered into the drawing.

What if I have questions?

Before you decide whether to accept this invitation to take part in the research study, please ask any questions that might come to mind now. Later, if you have any questions about the study, you can contact the researchers: Beth Salafia, by email (Elizabeth.Salafia@ndsu.edu) or by phone at (701) 231-7099; Kristen Benson, by email (Kristen.Benson@ndsu.edu) or by phone at (701) 231-5879. Additionally, you may contact the graduate research assistant for this study, Jessica Lemer (Jessica.L.Lemer@ndsu.edu), at any point in the study if you have questions.

What are my rights as a research participant?

You have rights as a participant in research. If you have questions about your rights or complaints about this research, you may talk to the researcher or contact the North Dakota State University Institutional Review Board by:

- Telephone: 701.231.8908
- Email: ndsu.ibr@ndsu.edu
- Mail: NDSU Institutional Review Board, 1735 NDSU Research Park Dr., Fargo, ND 58105

The role of the IRB is to see that your rights are protected in this research; more information about your rights can be found at: www.ndsu.edu/research/ibr.

You will be able to complete the survey and the drawing only once.