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Joel David Deloy

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PATTERNS OF RELATIONSHIP SATISFACTION AND SEXUAL BEHAVIOR AS A  
FUNCTION OF PORNOGRAPHY USE AMONG COLLEGE MEN

By

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Bachelor of Science, Black Hills State University, 1999  
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A Dissertation

Submitted to the Graduate Faculty

of the

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This dissertation, submitted by Joel D. Deloy in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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This dissertation meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

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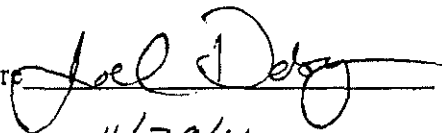
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## ABSTRACT

Recent research on sexually explicit materials (SEM), or pornography, has expanded from a focus on sexual violence, and aggression, towards the examination of the influence of SEM on other relationship factors. Available information on how males involved in a romantic relationship use SEM has been limited, and the effect of SEM use on relationship satisfaction and sexual behavior is not well understood. This study examined 245 college men who completed self-report measures of relationship satisfaction, core relationship variables (autonomy, affection, conflict resolution, intimacy, and equality) and SEM use patterns. All participants were in significant romantic relationships of at least three months duration. As predicted, SEM use was found to be common (60%) and associated with decreased relationship satisfaction even after the application of statistical controls for other core relationship influences. Shared SEM use with the romantic partner partially mitigated, but failed to reverse, this adverse relationship between SEM usage and relationship satisfaction. SEM use was associated with reports of a higher frequency of sexual relations with the romantic partner. SEM use may be detrimental as a result of unfulfilled partner sexual expectations as well as fantasies involving others and increased infidelity. Further research is required to understand the antecedents and consequences of SEM use on relationship maintenance, satisfaction and longevity for men and women.

## CHAPTER 1

### INTRODUCTION

Pornography and its effects has been a hotly debated topic for several decades. Presidential counsels have been formed, and research conducted to determine the potential of pornography to cause violence against women, to support censorship or free speech, and to define the obscene (Mann, Sidman, & Starr, 1970). Years later some of the same topics are debated; however, research has shifted toward pornography's potential effects on consumer values, morals, attitudes and interactions with their partners and the opposite sex (e.g., Mulac, Jansma, & Linz, 2002; Zillmann, & Bryant, 1988, Mitchell, Becker-Blease, & Finkelhor, 2005).

Interest in nudity and erotic material is well documented and evidenced in many ancient cultures. Examples of this fascination include sandstone engravings from 7000 B.C., Greek and Peruvian ceramic depictions of human sexual behavior, and literary works like the Kama Sutra, an Indian sex manual (Webb, 1982).

In more recent history, the quality and quantity of pornographic material has greatly increased. Motion pictures in the United States featuring nude females became available in 1899, with privately screened films of sexual intercourse accessible by 1902 (Slade, 1984), and photographs of female genitalia becoming legal in America by the 1960's. By the end of the decade scenes of oral and genital contact were widely Distributed. In the 1970's photographs of males and females in simulated sexual

activities became common; followed later by the addition of other scenes involving activities such as homosexuality, bondage, and paraphilic acts. VHS pornographic films accessibility improved in the 1980's and thereafter, erotic material became widely accessible world-wide via the internet.

In the USA pornography generates four billion dollars of annual revenue through internet, video and magazine sales. Pornography companies are listed on the NASDAQ stock exchange and constitute a 56 billion dollar global industry (Morais, 2000). What started out as crude images carved on a wall has now become high quality print and video of all conceivable sexual activity made readily available for private home viewing.

While many have consumed or profited from pornography, others have invested their time to secure its censorship or regulation. Many religious figures, social activists and behavioral scientists believe that pornography has great power to influence phenomena such as social mores, aggressive tendencies, crime in the streets, the quality of marital relations, sexual appetite, and perhaps even sexual orientation. While sexuality is an integral element of normal human functioning, the use of pornography to enhance sexual arousal has been associated with extremes of support and condemnation depending on the source.

Unfortunately, current research does not adequately address concerns about pornography consumption. This may be because research as well as legislation has been influenced by the intense personal and political convictions regarding pornography. Many studies have been guided by conservative, feminist, or liberal philosophies (Linz, & Malamuth, 1993) with minimal reliance on empirical evidence to advance their arguments. The most conservative perspective proposes that pornography has a negative

influence on the values and attitudes of individuals as well as social institutions (e.g., Zillmann & Bryan, 1982). Many liberal writers have implied that pornography is harmless, perhaps even beneficial, and important to preserve as a product of free speech. Some feminists have emphasized the subjective or victimized roles in which women are portrayed and the impact of these portrayals on viewers' attitudes and behaviors. Given these vast backgrounds it is understandable that studies on the effects of pornography have been influenced by each of these perspectives, and can be seen in the hypotheses made, outcome measures used, and conclusions drawn (Malamuth et al., 2000). Furthermore, findings have been used to support conclusions from competing perspectives since writers can easily misconstrue results by focusing attention on selective outcome measures that are consistent with their perspective. To this extent, scholarly efforts to analyze behavioral antecedents and consequences of pornography usage in objective empirical terms have been relatively few and far between.

#### Definition

Pornography has been defined inconsistently in the law and behavioral sciences. Terms such as "sexually aggressive," "pornography" (Kelley, 1985), "aggressive erotic" (Donnerstein & Berkowitz, 1981), "erotica," and "sexually explicit materials" have been applied with inconsistent effort to identify precise operational criteria (Malamuth, Addison, & Koss, 2000). In addition, the nature and content of pornographic material varies extensively by source. Variations in pornographic stimuli assure problems in the comparability of materials and participants examined from study to study. Inclusion and exclusion criteria are often poorly specified or considered, and the effects of many

pornographic material components have eluded controlled or systematic examination (Malamuth, Addison, & Koss, 2000).

Research advances have been made in linking particular forms of pornography to physical and sexual violence (Donnerstein & Berkowitz, 1981; Fisher & Barak, 1991), sadism (Zillmann & Bryant, 1984) or level of inhibition (Fisher & Barak, 1991). Seto et al. (2001) derived two alternative definitions of the erotic material from prior research that seemed more or less appropriate depending on situational context. They concluded that erotica is often manifested as adult women and men consensually engaging in pleasurable, nonviolent, non-degrading, sexual interactions (Fisher & Barak, 1989; Marshall & Barrett, 1990). Alternatively, pornography would be a more appropriate term for depictions of sexual activity involving an objectified, powerless, non-consenting participant in the act (Marshall & Barrett, 1990). Pornography may be subdivided further into a degrading or violent forms. The latter applies to examples of submissive or hypersexual behavior exhibited by people who appear to derive pleasure from degrading or humiliating circumstances (Fisher & Barak, 1991; Linz et al., 1987). Violent pornography involves depictions of sexually explicit acts that are designed to produce pain or physical injury (Fisher & Barak, 1989, 1991; Marshall & Barrett, 1990). Marshall and Barrett (1990) categorize both forms as manifestations of unaffectionate, impersonal and self-focused human behavior. Finally, pornography may be deemed obscene, and censured if it meets the three criteria laid down by the U.S. Supreme Court in *Miller v. California* in 1973. Its three parts are as follows: the average person, applying contemporary community standards views the work as appealing to the prurient interest; it depicts or describes, in an offensive way, sexual conduct as defined by

relevant state law; and if the work as a whole lacks serious literary, artistic, political, or scientific value (Brannigan, & Goldenberg, 1991).

### Theories of Pornography and Aggression

Researchers have proposed three primary theories sharing the proposition that pornography can influence violence, aggression, degradation, or objectification of women, and consequently contributes to increases in rates of violent sexual crimes committed.

The excitation transfer theory proposed by Schacter and Singer (1962) suggested that individual emotional experience was the product of autonomic arousal and the cognitive interpretation of that arousal state. What has been essential to this theory is the notion that people rely on external rather than internal cues to distinguish and label specific emotions. The intensity of emotions like anger have been thought to emerge as a partial function of physiological arousal level. This theory has led to a prediction that a person aroused by pornography and then angered by situational events may form classically conditioned associations that prompt aggressive ideations during future exposure to pornographic material (Allen et al. 1995). Pornographic stimuli could theoretically serve as eliciting stimuli for aggressive ideations and arousal. Arousal associated with aggression could also come to elicit ideations of a sexual nature.

Marshall & Eccles (1993) advanced a behavioral model that hypothesized pornography would have maximum effects on users who masturbated to orgasm during viewing due to the reinforcing potential of orgasm on the appetitive behavior. Laws and Marshall (1990) speculated that generalization would probably occur often which would provide opportunities for conditioned responses to sometimes shift toward deviant

or violent behaviors viewed in pornography prior/during masturbation. Associations between masturbation and violent acts could become habitual over time.

Feminist groups generally agree that sexual aggression is cultivated within a patriarchal power structure. Most assert that pornography is produced and consumed by men without respect for the consequences of male dominance and hostility toward women. Feminist writers have emphasized the extent to which women are violently sexualized and degraded in pornography and that these consistent themes reinforce the social subordination and sexual abuse of women in the real world. Brownmiller (1980) suggested that pornography in its purest form is an expression of hatred against women. She referenced the humiliation, degradation, and dehumanization of women for purpose of sexual stimulation as representative of hatred. In general feminist authors have suggested that pornography inflicts three types of harm. One form of harm is experienced by women who perform in pornographic films (Cole, 1989). Cole speculated that women who were often willing to "act" in pornographic films because of prior histories of sexual abuse. These re-enactments therefore represent examples of physically, sexually, and emotionally re-abuse. Dworkin and MacKinnon (1988) hypothesized that the behaviors and attitudes portrayed in pornography modeled the violent treatment of women while affecting the attitudes and beliefs of the viewers. Others have proposed that these negative attitudes and beliefs inflict social harm to both men and women by reinforcing strict gender role acceptance of female victimization and male perpetration. Dworkin (1980) suggested that this creates a reciprocal pattern of pornography-induced hatred and lust of women.



However, not all feminists view pornography as only harmful. Some suggest that pornography also has the potential to be beneficial. It has been proposed that the context and the content of sexually explicit materials provide essential mediators of its personal consequences and broader social impact (Russell, 1993; Cowan & Dunn, 1994). They have expressed concern that attempts to regulate pornography will often rely on a progression of censorship (Killoran, 1983) that ignores the "liberating" elements of pornography for some women (Cowan, 1992). The observation has been made that a subset of women enjoy the control and attention, perhaps even worship, they receive as erotic objects in pornography. Paglia (1994) in particular has emphasized how far women have come in transcending the sexual repression historically forced on them in society. Rather than censoring pornographic production, these feminists have promoted the efforts of women to produce and, control their own sexually explicit material to assure its accurate and pro-social portrayal.

#### Social Learning Theory

Variations of social learning theory have come to the forefront to understand how SEM affects normal human behavior and relationships. Social learning theorists have asserted that people learn inappropriate and appropriate behavior via interaction, observation, and vicarious learning (Bandura, 1977). In general, a child's parents, friends, and media all serve as potential models for sexual behavior and cognitions about sex in general. Mass media is thought to provide diverse models for the acquisition of sexual behavior and tendencies. Sexual model behavior accompanied by evident pleasure without negative outcome is thought to be vicariously reinforced. As an example of learned sexual violence, if an actor in a pornographic movie were to commit a sexual

offense (e.g., rape), experience pleasure, and not be punished for the crime (e.g., see the victim in pain or suffering, or see the perpetrator incarcerated), there should be, according to one model of social learning theory, a disinhibiting response in the viewer toward the observed behavior (Check & Malamuth, 1986). Conversely, if the man in the video were reinforced for behaving in a non-aggressive fashion, observers would be expected to imitate that behavior as well (Donnerstein & Linz, 1987; Nurius & Norris, 1995).

Bandura (1977) distinguished between behavioral capacity and probability of expression. Exposure to images in pornography may lead to greater acceptance of some behaviors that are not manifested in the absence of sufficient environmental circumstances or situational cues. For example, a man may infer from the behavior of an actor in a pornographic tape that rape is enjoyable to both perpetrator and victim. This observational learning trial might manifest itself in lenient attitudes about rape as a crime or in higher levels of overt aggression towards others in a laboratory setting (Malamuth, Haber, & Feshbach, 1980). Under other circumstances, sexual violence could occur. Social learning theory hypothesizes that pornographic sexual acts can: (a) teach new modes of sexual behavior, (b) facilitate the already acquired socially acceptable forms of sexual behavior, (c) strengthen or weaken inhibitions over acquired socially unacceptable forms of sexual behavior; (d) increase sexually aggressive behavior after exposure to pornography involving models with whom the observer identifies; and (e) there will not be an increase in aggressive behavior after exposure to nonviolent pornography (Bandura, 1977; Allen et al., 1995).

Regarding learning of normal behavior, Rotter (1954) asserted that behavior is the result of expected rewards, and that expectations are developed from observing others.

These expectancies can act as reinforcers of behavior, as well as mediating future behavior, and it has been argued that sexual expectancies and behaviors can be particularly strong reinforcers (Rotter, 1954; Hovell et al., 1994). That is, given that people are social beings and learn from watching others, sexual attitudes and behaviors can be taught (Hogbe & Bryne, 1998). Furthermore, SEM is likely to be the most graphic and detailed form of modeled teaching adolescents or adults will ever receive on sexual behaviors, and what expectancies one should have in a sexual relationship. These expectancies may include what their partner's body should look like, what their own physical appearance should be, the frequency of sex, number of partners, potential sexual behaviors, and the overall importance of sex relative to other areas of their lives and relationships. For example, consumers of non-violent SEM consistently overestimate the popularity of less common sexual behaviors. (Zillmann & Bryant, 1984).

In classical and operant conditioning, behaviors and consequences are causally linked, and behaviors can often be predicted by objective events. In contrast, social learning theory proposes that a person's cognitions mediate the cues from their environment, and this cognitive mediation results in expectations. The expectations can come to be reinforcing or punishing, and expectations will ultimately influence the impact of the consequences. According to this model, when SEM is watched it triggers certain cognitions and expectancies in the viewer regarding sexual activity. These thoughts and expectations may become pleasurable (and be accompanied by physical arousal), thus reinforcing the SEM watching behavior. In the case of positive expectancies the viewer is likely to either self-stimulate (i.e., masturbation) or approach their partner. Given the unrealistic qualities of most pornographic materials the

expectancies developed will likely be unmet, across many variables, which may lead to dissatisfaction with their partner across those variables.

Check and Malamuth (1986) noted that social learning and feminist theory shared some common precepts. Both schools of thought support the role of learning in the inhibition or disinhibition of sexual aggression directed toward women, and that this learning may lead to a form of sexual behavior that reinforces and condones physical violence towards women. Another similarity between the two theories is the potential for positive effects from nonviolent, non-degrading pornography. While violent pornography may lead to antisocial tendencies, other forms of erotica could have pro-social effects. Social learning theory provides a more specific model and set of predictions about how pornography may affect both pro-social and antisocial attitudes and behaviors. The feminist campaign against pornography have largely relied on empirical support regarding the latter effects (Check, & Malamuth, 1986). Most of the following studies can be cited in support of this basic feminist and social learning hypothesis regarding the harmful effects of pornography.

#### Correlation Studies

Changes in national policies towards pornography over the last forty years have made it possible to examine the association between pornography and population behaviors. That is, in certain countries within fairly finite time periods, pornography has gone from being relatively limited and illegal to being legal and abundant. In an effort to understand consequences of these policy changes, researchers have examined population trends in sex crimes across those years and compared these to countries with little or no pornography. The work by Kutchinsky (1991) is a good example of this research design.

He examined the prevalence of sex crimes in Sweden, Japan, and Denmark during years that the regulation of sexually explicit material (SEM) was decreasing (i.e. 1964-1984). Kutchinsky compared the prevalence of reported rape to the incidents of nonsexual violent crimes, across time. The results indicated that despite an influx of SEM into these areas there was no increase in reports of rape compared to other violent crimes. Two factors warrant consideration in analyzing these Denmark results: (1) at the same time that pornography was legalized, a number of other sex crimes were decriminalized, including voyeurism, indecency towards women, and certain categories of incest; and (2) rape in this study was grouped with other lesser categories of sex crime. Additional analyses demonstrated that more serious sex crimes such as rape actually increased in rate following the legalization of pornography in Denmark (Court, 1977). Kutchinsky attributed this increase to a greater awareness in women and police of the rape problem.

Similar data has been gathered from Japan. From 1972 to 1995 Japan transitioned from a nation with conservative pornography regulation to one with permissive policies. Crime statistics based on individual police investigations of rape, murder, and nonsexual violent crimes were compared across this period of change. The data identified a dramatic reduction in the number of rape cases from 5,464 in 1972 to 1,500 incidences in 1995. There was a sharp decrease in the number of gang rapes, rapes committed by juveniles, family rape, and date rape (Diamond, 2001). It was unclear, however, whether other potential confounding variables or policies occurring during this time contributed to the changes.

These collective studies suggested that an increase in the availability of SEM over many years had either no effect or even decreased the incidence of violent sexual crime.

These trends appeared to offer support to the notion that SEM had positive effects on sexual aggression, but a number of reservations warranted consideration. First, none of these studies were able to differentiate between pornography that was legalized versus that which was not. Second, there was no control over other factors that changed in society at the same time as the SEM increase, such as the changes in the pattern of criminal prosecution for violent sexual crimes, technology for court evidence, decrease in drug use and availability, or the increase in sexual activities broadly accompanying the sexual revolution of this time period (Diamond, 1999). Finally, Denmark and Japan are made up of unique cultures, which make it impractical to generalize these findings to all cultures.

Cohort studies also have been used to examine pornography effects. Several studies have examined the use of SEM by sexual offenders who retrospectively endorsed self-report measures for comparison with a control group. These studies typically concluded without significant differences between groups varying in exposure to SEM (e.g., Condrón & Nutter, 1988; Goldstein et al., 1971; Langevin et al., 1988; Marshall, 1988). Differences were found by some researchers for the age of first exposure to SEM. Non-offenders tended to be exposed earlier to SEM than offenders (Marshall, 1988). At the same time, when some convicts were interviewed, they claimed that pornography helped them release sexual urges that they would have otherwise taken out on others. Thus, as suggested by Crepault, (1972) SEM may be a way to act out fantasies without hurting innocent victims, and Diamond (1999) argued that SEM could be used as a safety valve for antisocial impulses." This cathartic model has been supported historically in psychoanalytic literature, but empirical evidence is not available to demonstrate such an

effect. Convicted sex offenders instead talk about the arousal-enhancing qualities of SEM. Carter et al. (1987) and Marshall (1988) found that rapists, more specifically, child molesters reported frequent use of SEM immediately prior to their sexual offenses. SEM was described instead in rather direct terms as a catalyst.

The appeal of these studies is their examination of important real-life outcomes, such as rape. The weaknesses of this particular methodology involves: (a) the possibility of self-report biases (e.g., attempting to portray a more positive image, and less sexually deviant), and (b) the lack of experimental control in these correlational analyses. It therefore becomes impossible to establish whether SEM causes sexual acting out or merely attracts inevitable perpetrators who were predisposed to crave the material.

#### Laboratory Studies

Experimental lab-based studies have been designed to examine more closely this relationship between violent sexually explicit material (VSEM), SEM, and aggression. These studies have typically examined the impact of VSEM on beliefs, attitudes, cognitions, and laboratory indices of physical aggressive tendencies towards women. VSEM and SEM exposure has been used in conjunction with the Buss shock paradigm (e.g., Donnerstein & Berkowitz, 1981; Malamuth & Ceniti, 1986) to assess aggressive potential as observed in the laboratory environment. The Buss procedure utilizes a confederate who unfairly treats and angers male participants unfairly prior to VSEM exposure. The male then has the option of administering an aversive stimuli (e.g., shock, or loud noise) to punish the confederate when they make a mistake on a learning task. Malamuth (1986) demonstrated with this experimental design that VSEM increased

aggression toward women but not other men. In a follow-up study, non-angered males were exposed to SEM or VSEM (depicting a female enjoying the experience of being raped), and only males exposed to VSEM displayed aggression toward females (Malamuth, 1996; Malamuth & Ceniti, 1986). These results demonstrated the potential effects of VSEM on male aggressive tendencies toward women.

The external validity of laboratory aggression analog studies such as those cited above have been challenged. Seto et al. (2001) questioned the assumption that applying a shock to a female confederate was a suitable proxy measure of rape or other forms of sexual aggression in the natural environment. While these concerns warrant attention, many participants did demonstrate aggressive behavior as operationalized, which could be disruptive in close relationships even if they do not culminate in acts as serious as rape. Hall and Hirschman (1994), also questioned the external validity of the shock design, and were more interested in distinguishing the potential for sexual violent (e.g., rape) and violent sexual (e.g., abuse of a nude female) behaviors, along with identifying specific male traits that lead to sexual aggression. Their study participants were comprised of males who scored high and low on a measure of sexual coercion. Participants viewed video stimuli that were either neutral, sexually violent, or violent sexual stimulus, and subsequently choose which these same stimuli would be administered to female confederate. Out of a sample of ninety-one, only thirteen males were classified as non coercive as classified by the screening measure. Results indicated a significant difference between the two groups of males on their willingness to make the confederate view the aggressive material (i.e., coercive males chose aggressive material), but there was no difference between which type. Although Hall (1996) acknowledges



VSEM's potential to the development of deviant patterns of sexual arousal, the design of the previous study used VSEM as a tool for aggression assessment, rather than measuring the impact of its exposure to the sexually coercive males.

Zillman and Bryant (1982) exposed male and female participants to varying lengths of SEM. Participants viewed either 6 or 3 hours of either pornography or neutral control materials. Only those that viewed almost 5 hours of SEM significantly differed from controls on self-report measures of attitudes. That is, men and women exposed to SEM were: (a) more likely to believe that a larger proportion of the population engaged in extreme sexual fetishes (e.g., bestiality, group sadomasochism); (b) were less supportive of sexual equality; (c) were more lenient towards rapist; and (d) were more likely to be sexually calloused towards women (Zillman & Bryant, 1982).

Some laboratory studies have utilized self-report as well in efforts to approximate changes in tendencies toward sexually violence. Donnerstein (1984) found that participants exposed to SEM were more likely to rate a victim of sexual assault as being less physically or mentally harmed than they claimed. Similarly, VSEM video footage of a women "enjoying" being raped produced self-reports by men that the act was welcomed by the recipient (Malamuth, & Check, 1985), while women viewers were more inclined toward lenient sentencing of the perpetrator if arrested and prosecuted (Malamuth, Haber, & Feshback, 1980). In other studies, men and women viewers exposed to VSEM scored higher on rape myth acceptance (Donnerstein, Berkowitz, & Linz, 1986), with the men reporting a greater likely to engage in the modeled behavior than counterparts assigned to a no exposure control groups (Check, 1985; Malamuth & Check, 1980).

The results of these studies suggested that VSEM, and to a lesser extent SEM, may encourage, or at least diminish inhibitions, toward sexual violence. In addition, some studies have identified an interaction between VSEM and individual dispositions. Malamuth and Check (1985) found that those classified as "high likelihood of raping," by the Eysenck Personality Questionnaire were more likely to identify women they thought would enjoy being raped. Similarly, Malamuth, Haber, and Feshback, (1980) found that those with lower aggression anxiety rated rape victims' experiences of pain to be lower than controls. This suggests that in regards to sexual violence the effect of pornography may be mediated by personal characteristics.

Malamuth et al., (2000) examined a variety of possible moderating factors to explain different outcomes for different individuals. The authors hypothesized that proneness towards aggression and VSEM strongly interacted. An effort was made to examine SEM effects on sexual aggression after controlling for potential moderator variables. A sample of 1,770 men randomly selected from colleges across the United States. The mean age of the sample was 21 years old. Self-reports were used to measure the amount of SEM use (magazines only), sexual aggression (The Koss and Oros, 1982), nonsexual aggression (Conflict Tactics Scale), sexual promiscuity (i.e., age of first intercourse and number of sexual partners), and hostile masculinity.

This large sample study identified pornography as a significant predictor of sexual aggression after controlling for these dispositional differences. The strongest predictor of elevated sexual aggression risk came from high pornography usage combined with high scores on the hostile masculinity and sexual promiscuity scales. These results were similar to those of Check and Guloien (1989) who found significant effects on various

measures of sexually aggressive tendencies for only those who were habitually high pornography consumers. An important limitation of this study involved their measure of SEM which assessed only magazine usage and disregarded video, internet or other popular mediums in contemporary culture (Boies et al., 2002). Similarly, the study did not distinguish between SEM and VSEM which as shown previously should produce different outcomes (i.e., higher aggression, objectifying, and acceptance of violence for VSEM).

One SEM and VSEM meta-analysis (D'Alessio et al., 1995) has been conducted and included 33 studies and 2,040 participants. These authors concluded that aggressive personality dispositions interacted with VSEM and SEM exposure to increase the risk of lenient attitudes toward sexual aggression. They emphasized suggestions of stronger relationships between attitudes toward aggression and VSEM and SEM at the extreme ends of the latter distributions. They speculated that the risk of violent reactions to VSEM was elevated among respondents with more extreme personal attitudes or aggressive personality dispositions.

In summary, the laboratory literature suggested that SEM affected viewer beliefs and attitudes regarding sexual aggression, victim responsibility for sexual violence, and personal willingness to engage in coercive sexual practices. These studies also provided partial support for the potential of SEM to affect behavior examined under controlled circumstances. Given these presumed negative attitudinal and behavioral changes secondary to SEM/VSEM consumption, a logical question remains as to the levels of exposure necessary to achieve clinically significant effects, or what other type of nonviolent effect may be found? The data discussed in the present review suggested

that long periods of exposure combined with high aggressive predispositions was most predictive of unfavorable outcomes (Check, 1985; Malamuth et al, 2000). Negative effects have been found, however, for varying durations of exposure (Malamuth, Haber, & Feshbach, 1980; Malamuth, Reisin, & Spinner, 1979; Check, 1985). It seems reasonable to hypothesize that negative SEM effects would also include negative effects on relationship factors less extreme than aggression, particularly for habitual users.

### Relationship Satisfaction

The bulk of SEM research has examined sexual aggression as a primary outcome variable. Other effects of SEM exposure have been largely ignored. An area of interest in the present study involves the associations between SEM exposure and relationship satisfaction. A uniform definition of relationship satisfaction has not emerged in the psychological literature. Different theorists have emphasized alternative contributors, with measures of relationship satisfaction varying greatly (Hendrick, 1988; Miller & Lefcourt, 1982; Schaefer & Olson, 1981; Snyder & Costin, 1994; Spanier, 1976; Wright, 1974, 1982, 1989; Wright & Scanlon, 1991). Heyman (1994) and Norton (1983) discussed an inherent problem in the use of relationship satisfaction as a primary outcome measure. Most relationship satisfaction measures such as the Dyadic Adjustment Scale (DAS) (Spanier, 1976) contain items measuring factors that serve as both cause and effect of relationship satisfaction. Caution is warranted that independent variables examined in a particular study may be reflected broadly in the item content of the relationship satisfaction outcome measure. Eddy, Heyman, and Weiss (1991) used factor analysis to demonstrate that feelings of relationship satisfaction accounted for less than 25% of the variance in the DAS. Thus, researchers who rely on relationship satisfaction

measures must examine scale content carefully to avoid overlap between predictor and outcome variable content domains.

Kurdek (1998) proposed the relationship satisfaction can best be described using a five dimension model consisting of four forces from within the relationship (*intimacy*, merging of self and another; *autonomy*, a sense of self that is separate from the relationship; *equality*, both partners share equal power and investment in the relationship; and *constructive problem solving*, negotiating and compromising) and one from outside (*barriers to leaving*, pressures to stay together). He compared scores and changes in scores on the five dimensions of married heterosexuals, cohabitating homosexuals, and lesbian couples over a five year period. Kurdek theorized that the dimensions represented gender-linked processes of how each gender experienced their relationship, and as such, homosexual and lesbian couples should differ from heterosexuals according to the varied importance placed on each dimension demonstrated by gender. Kurdek examined the predictive power of baseline relationship satisfaction ratings and the five dimension rankings of one partner, and both partners, on relationship satisfaction (or dissolution) five years later. The measure used to assess relationship satisfaction was Schumm et al.'s (1986) three-item Marital Satisfaction Scale, which used a 9-point scale to measure how true it was that one was satisfied with the relationship, partner, and relationship with the partner. Similar patterns were found across relationship types. For all participants lower equality, lower constructive problem solving, and lower intimacy were unique predictors of a continuous decline in relationship satisfaction. Partner appraisal of equality and constructive problem solving were shown to uniquely contribute to personal evaluations of relationship satisfaction. Similarly, Hill & Peplau (1998)

found that intimacy, conflict management, and equality in premarital relationships were significant predictors of relationship satisfaction and staying married in a long-term follow-up study.

#### *Positive Effects of SEM on Sexual Performance*

Some of the strongest advocates of the positive effects of SEM are clinicians who specialize in sex therapy which has been around since the 1960s. SEM has been described as essential and effective (Striar & Bartlik, 1999; Robinson et al., 1999) elements of these specialized treatment regimens for sexual dysfunction or simply as a method to improve the intimacy in a relationship. While some authors and practitioners have provided limited empirical evidence to support these claims, they do provide a logical basis for beneficial SEM effects that are supported by years of practical experience and extensive anecdotal accounts. One well supported effect of non-violent SEM is its ability to stimulate sexual arousal in both genders (Money, 1970; Koukounas & MacCabe, 1997; Youn, 2006). Furthermore, both genders reported higher levels of subjective arousal to video SEM that contained emotional or romantic themes than those that did not (Koukounas, & Over, 2001). Given this effect of SEM it is reasonable to assume that it may be beneficial in the treatment of individuals with arousal disorders. In fact some studies have demonstrated a greater increase in subjective arousal, and reduction in sexual anxiety levels for those in which SEM was incorporated into their treatment for sexual dysfunctions (Sharpe, & Meyer, 1973; Wincze, & Caird, 1976)

The majority of empirical support for the use of SEM in therapy has come from behavioral marital therapists who have systematically exposed patients to progressive levels of SEM and sexual activity over time. This method is designed to decrease anxiety

associated with sexual activity over time while increasing sexual arousal in those with less direct experience or sexual desire (Hogan, 1978; Lobitz and LoPiccolo, 1977). For example, a study by Wincze and Caird (1976) found that SEM was more effective than imaginal exposure in treating women with low levels of arousal. Both groups (systematic desensitization, and video desensitization) received relaxation training in addition to hierarchical desensitization, and participants were specifically instructed to think about themselves and their partner engaging in the sexual acts they watched instead of the actors in the stimuli. These favorable results seemed to apply to mutual rather than private exposure to SEM. A similar study by Dermer and Pyszczynski (1978) found that participants who were instructed to think of their partner while reading erotic literature reported increased sexual attraction to their mates.

Thus, the nature and role of participant fantasies during exposure may provide important mediating roles in SEM effects on relationship satisfaction. That is, for those who are able to focus on, and fantasize about their partner during SEM exposure may actually increase their attraction to their partner and ultimately relationship satisfaction. Questions remain as to whether or not these favorable effects were restricted to couples who shared their SEM exposure or those whose fantasies focused primarily on their partner rather than the SEM performers. It should be noted that the population in these studies were individuals seeking aid for sexual dysfunction, and that the selection (non-demoralizing) and delivery (amount of exposure) of the SEM was controlled by the therapists. Whether similar SEM effects are associated with positive or negative general effects on sexual functioning and relationship satisfaction within the general population remain unclear. Furthermore, Striar and Bartlik (1999) suggest that use of SEM

contraindications might include men or women with body image distortions or performance deficits that may be magnified by comparisons with the feats and physiques of pornographic actors and actresses.

There is one study that suggested the positive effects of explicit materials on sexual satisfaction and marital satisfaction for those of normal functioning (Nathan & Joanning, 1985). The authors designed an uncontrolled treatment study that relied on group workshops and exercises along with films depicting sensate focus techniques. While the results were positive, due to the studies design, the contribution of the explicit material was unclear, so no real data is presently available to inform the research community as to the extent that couples in the general population use SEM to try to improve relationship quality.

#### *Negative Effects of SEM on Relationships*

In the 1980's a few researchers began to experimentally examine the potential impact of SEM use on the sexual experience of romantic couples. Kenrick, Guitierres, and Goldberg, (1982) found that exposure to pornography, primarily nude pictures, led men to contrast the models they viewed to their romantic partners. In this study, men were exposed to nude photographs of women, or to abstract paintings in a control condition, and were then instructed to evaluate their current intimate partners. Exposure to the nude stimuli led men exposed to SEM to perceive their female partners as less sexually attractive. Furthermore, there was a significant tendency for these men to report loving their partners less after being exposed to the beautiful nudes than the control group. Therefore, men who frequently view SEM may form more negative images of their partners than those with minimal exposure.



Gana, Trouillet, Martin, and Toffart (2001) examined the relationship between solitary sexual behaviors (i.e., masturbation, or pornography use) and boredom-proneness. These researchers hypothesized that those who were highly boredom-prone were more likely to engage in solitary sexual activities (pornography and masturbation). Participants were 155 adults (62 men, 93 women: 57% married, 24% single, and 19% cohabitators). The average age was 45.3 years. Participants completed a boredom-proneness scale along with measures of sexual behavior and depression. ANOVA indicated a significant difference between people with high and low boredom proneness on sexual behaviors (i.e., masturbation and pornography use). In addition, multiple regression revealed that younger men who were bored with a low sexual satisfaction were the most likely to use SEM and masturbate. Low sexual satisfaction was associated with SEM use and masturbatory activity.

Extending the results of the Gana et al. (2001) study, Boies (2002) also asked students to endorse their reasons and contexts of pornography use and found that 82% of college students who viewed internet SEM culminated the act in masturbation. Most of this viewing was reported to occur in isolation. While alternative reasons were often given for accessing the material (e.g. entertainment, curiosity, arousal, even education about techniques to improve intimacy), the outcome of self-stimulation seemed most predictable. Even respondents expressing disgust for the images reported (62%) masturbation during or immediately after viewing. SEM that was even perceived as revolting seemed to have the power to physically arouse and behaviorally activate a majority of the viewers. The impact of this pattern of exposure followed by masturbation

on relationship factors has been left largely unexamined in the psychological literature. It seems that positive associations would be created between the SEM and sexual expectancies and behaviors. It is also possible that as the rate of SEM triggered masturbation increases the rate of sexual contact with their partner should decrease. Another possible explanation for some of the males sexual behaviors in this study is the work of Bancroft, and Vukadinovic (2004), who have identified the tendency of young males to implement sexual behaviors to regulate mood. Specifically they hypothesize that masturbation is implemented for the transient pleasure, calming, and distraction it provides post orgasm from their negative affect.

There is growing societal concern over the abundance and accessibility of SEM and VSEM on the internet. Fisher and Barak (2001) suggest consumption of SEM over the internet is so attractive because of anonymity, low cost, and immediate access to an unlimited range of sexual material. Essentially, on the Internet an environment is created that allows those who would not normally view SEM but now do so because of the removal of certain social, and cost barriers. Citing a raise in concern over Internet pornography related problems by professionals, Mitchell, Becker-Blease, and Finkelhor (2005) surveyed 1,504 mental health practitioners with clients who reported an Internet-related problem. Out of all internet reported problems, pornography (56%) was second behind overuse. Pornography related problems included: partner conflict, overuse, distress over unwanted exposure, growth of deviant sexual interests, illegal pornography, and inappropriate exposure. The authors called for continued research to examine the role of internet pornography in the development of sexual behaviors, and for practitioners to include these problems as a part of routine assessments.

Zillmann and Bryant (1988) hypothesized that video pornography would result in negative comparisons of partner and SEM sexual performance. They predicted that the viewer's partner would be perceived as inferior compared to the energetic, even athletic, competencies of the featured characters in SEM films. This team speculated that these negative contrasts would lower viewer satisfaction in their mate's appearance as well as sexual performance. They recruited 160 men and women from student and non-student populations who were willing to be exposed to pornographic material. Participants were exposed to either six weekly one-hour sessions of pornography or non-erotic comedic material. The pornography displayed explicit nudity and intercourse but was non-violent (not necessarily equal in power) and non-paraphilic. On the seventh week (one week after the last exposure) participants were asked to fill out three self-report questionnaires designed by the researchers. The measures had participants identify on a Likert scale their satisfaction with their current sexual partner, sex life, and other areas of life. Unfortunately, baseline levels for these variables were not assessed. When compared to the control participants, the exposure group reported significantly lower levels of satisfaction with their partner's sexuality, physical appeal, affective expression, and sexual curiosity. In addition, SEM viewers scored significantly lower on measures of faithfulness, family relating, and the value of fidelity across both genders. A factor analysis yielded three dimensions: Sexual Happiness, Professional Satisfaction, and Value of Commitment. The SEM appeared to be most strongly linked to sexual happiness and value of commitment but not professional satisfaction. The authors speculated that these outcomes could elevate risks of infidelity in insecure relationships. The absence of baseline measures warranted attention. It was possible that the exposure

group began with higher levels of SEM consumption and lower initial levels of relationship satisfaction. Despite random assignment, the equality of the groups on these important measures was not established at the outset. Several potential moderating variables were left unexamined in this study: (1) background factors such as the age of first SEM use; (2) the frequency and volume at which participants were viewing SEM spontaneously; (3) the type of SEM participants were viewing (e.g., video or photographs, heterosexual or lesbian, etc.); (4) the context in which SEM was consumed (e.g. alone, for stimulation or together for relationship improvement); and (5) other relationship factors that have been found to predict relationship satisfaction.

#### Current Study

The purpose of the present study was to advance present knowledge regarding relationships between SEM exposure, relationship satisfaction, and frequency of sexual activity. An attempt was made to replicate previous findings (Zillman & Bryant, 1988) that SEM exposure is associated with decreased relationship satisfaction among college students. This study also extended the literature by evaluating this general SEM effect in the context of other important relationship factors, as well as testing the moderating effect of couples' consuming SEM together. A number of hypotheses regarding SEM relationships with partner satisfaction were tested:

1. For the total sample, level of SEM use will be negatively associated with
  - a. Core relationship factors: relationship equality, intimacy, autonomy, affection, and conflict resolution
  - b. Broad relationship satisfaction (RAS score)
  - c. Satisfaction with frequency of couple's sexual activity

- d. Satisfaction with partner's appearance
  - e. Satisfaction with partner's sexual behavior
  - f. Satisfaction with partner's affection
2. For the total sample, SEM use will remain a significant predictor of decreased relationship satisfaction when controlling for the significant effects of core relationship variables: relationship equality, intimacy, autonomy, affection, and conflict resolution.
  3. For the subsample of SEM users, SEM use will remain a significant predictor of decreased relationship satisfaction when controlling for the significant effects of core relationship variables. Additionally, the direction and strength of the relationship between SEM use and decreased relationship satisfaction will be moderated by an SEM use by SEM Sharing interaction, i.e., shared use will be less detrimental.
  4. For the total sample, SEM use will remain a significant predictor of frequency of increased sexual activity with relationship partner, when controlling for the significant effects of core relationship variables: relationship equality, intimacy, autonomy, affection, and conflict resolution.
  5. For the subsample of SEM users, SEM use will remain a significant predictor of increased frequency of sexual activity with relationship partner, when controlling for the significant effects of core relationship variables. Additionally, the direction and strength of the increased relationship between SEM use and sexual activity frequency will be moderated by an SEM use by SEM Sharing interaction.

## CHAPTER II

### METHOD

#### Participants

A total of 245 males enrolled in undergraduate psychology classes at the University of North Dakota were solicited to participate in this survey study. Students were asked to participate and be included in the study only if they were 18 years of age and had been “in love” with an intimate relationship partner for at least the previous three months. All participants who signed the consent form and complete the self-report measures were given extra credit for their participation.

#### Measures

##### *Demographic Information.*

Participants completed a short questionnaire to gather demographic and background information, as well as to assess relationship status (see Appendix B). For this study, participants were considered partners in a romantic relationship if they answered positively to the item: “Are you currently in a romantic relationship in which you consider yourself ‘in love’?” and endorsed least three months to “How long have you been in the current romantic relationship?” Thus, relationship status criteria were similar, but somewhat more stringent than those used for college students in Hendrick (1988).

## Dependent Variables

### *Relationship Satisfaction.*

Broad relationship satisfaction was measured with the Relationship Assessment Scale (RAS; Hendrick, 1988). The RAS (see Appendix C) is a brief inventory querying respondents' subjective assessment of the overall quality of their romantic relationship. Items on this scale are scored from 1 (low satisfaction) to 5 (high satisfaction), with two items being reverse scored. Scores from each of the seven items are summed for a total score. Hendrick (1988) found that college students who were in romantic relationships (self-reportedly "in love") had an average total score of 29.14. The RAS was found to be reliable (Cronbach's alpha = .86) and showed concurrent validity by correlating significantly with other measures of marital satisfaction, including the Total (.80) and Dyadic Satisfaction (.83) subscales of the Dyadic Adjustment Scale (Spanier & Graham, 1976). Additionally, the RAS correctly discriminated couples' remaining together after one semester with the same accuracy (83%) as the DAS.

### *Sexual Behaviors and Partner Satisfaction.*

The frequency of participants' sexual behavior for the previous month were assessed in Erotic Materials use Questionnaire. Satisfaction with aspects of romantic partners were assessed using items from the Inventory of Personal Happiness (Cronbach's alpha = 0.85), developed by Zillman & Bryant (1988). The questionnaire assesses satisfaction with the respondent's current sexual partner's physical appearance, level of affection, and sexual behavior. One item was added to assess respondents' satisfaction with the frequency of sexual interactions in their current relationship. Respondents endorsed satisfaction on a scale of 1 "Not satisfied at all" to 10 "Extremely

satisfied.” The items (see Appendix D) were selected because they: (1) measured significant relationship satisfaction changes associated with pornography use in students; (2) could be scored for individual respondents, independent of their romantic partners; and (3) were worded to be inclusive of partner categories (e.g. married, unmarried, hetero- or homosexual).

### Predictor Variables

#### *Erotic Materials Use Questionnaire.*

This measure was developed through the efforts of faculty and graduate students, given the current lack of a recognized measure for pornography usage. This customized questionnaire is similar to other self-report indices of SEM usage (e.g., Gana, Trouillet, Martin, & Toffart, 2001; Goodson, McCormick, & Evans, 2000). Participants were asked to self-report their recent sexual behavior with regards to average frequency of sexual behavior with partner or alone, average frequency of pornography use, the context of pornography use, the type of pornography used, existence of sexual dysfunction, sexual paraphilias and perceived function of pornography use (see Appendix B). Because of the privacy of these topics, the questionnaire initially reassured respondents of the anonymity and confidentiality with which their data were treated.

#### *Relationship Indicators.*

Potential core predictors of positive relationships including intimacy, autonomy, affection, equality, and conflict resolution were also measured in this self-report survey using items selected from two empirically supported questionnaires. Intimacy (seven items), autonomy (six items), equality (eight items), and constructive problem solving (eight items) scales were included from Kurdeck's (1998) relationship quality measure.



Each of these scale dimensions were found to be reliable (Chronbach's alpha = .78 to .91) and significant predictors of relationship satisfaction trajectories over five years for both heterosexual and homosexual couples. Additionally, two items of the affectional expression scale from Spanier and Graham's DAS (1976) were included. For consistency, all items were scored using a seven-point Likert scale ranging from 1 (not at all) to 7 (very much), with higher scores representing positive relationship patterns. In each domain, items were selected and distinguished from overall satisfaction questions because of their focus on relationship interactional processes. As discussed by Norton (1983) and Heyman, Sayers, and Bellack (1994), it is important to methodologically separate these variables to: (1) prevent inaccurate inflation of the importance of predictors on relationship quality outcome measures; and (2) allow for specific explorations of interactional processes.

#### Procedure

During regularly scheduled undergraduate psychology classes, students completed the series of questionnaires as part of a group research screening session. Prior to completing questionnaires, participants reviewed the consent form describing the content, purpose, risks, and benefits of study participation. Those who agreed to participate indicated their consent by signing. Consent forms and questionnaires were identified by participant numbers. After data entry, consent was separated from questionnaires to assure that confidential information was stored separately and securely. All students who participated received extra credit toward a psychology course.

## Design & Analysis

The associations between SEM use variables, relationship satisfaction measures, and core relationship factors (Hypothesis 1) was assessed using statistical significance testing of their bivariate correlations. Group comparisons between SEM users and non-users were analyzed using independent sample *T*-tests. The statistical significance of shared versus individual SEM use (Hypotheses 2 through 5) on relationship satisfaction and the frequency of sexual activity were examined in separate multiple (least squares) regression analyses (using  $p < .01$  as a variable inclusion criterion) for the total participant pool as well as the SEM-using subsample ( $n = 148$ ).

### *Step One for Relationship Satisfaction*

Because the six measures of relationship satisfaction (Affection Satisfaction, Sexual Behavior Satisfaction, Sex Frequency Satisfaction, Appearance Satisfaction, and RAS Score) were highly correlated, these were summed to create a relationship satisfaction composite score, Relationship Satisfaction. The step one regression model predicted Relationship Satisfaction. Predictors included quantity of SEM use (SEM Hours), and the five core relationship variables (Conflict Resolution, Intimacy, Equality, Affection, and Autonomy) previously identified as important predictors of relationship satisfaction. Length of the relationship was also included as predictor.

### *Step Two for Relationship Satisfaction.*

To further examine the impact of SEM use on relationship satisfaction for SEM users specifically, multiple regression analysis was performed for this subsample of participants ( $N = 148$ ). Predictors found to be significant in the level one analysis were

included. Additionally, SEM Sharing was included. Finally, an SEM Hours X SEM Sharing interaction variable was included as a predictor.

*Step One for Sexual Activity Frequency.*

Predictors included quantity of SEM use (SEM Hours), and the five core relationship variables (Conflict Resolution, Intimacy, Equality, Affection, and Autonomy) previously identified as important predictors of relationship satisfaction. Length of the relationship was also included as predictor.

*Step Two for Sexual Activity Frequency.*

To further examine the impact of SEM use on sexual activity frequency for SEM users specifically, multiple regression analysis was performed for this subsample of participants (N = 148). Predictors found to be significant in the level one analysis were included. Additionally, SEM Sharing was included. Finally, an SEM Hours X SEM Sharing interaction variable was included as a predictor.

## CHAPTER III

### RESULTS

#### Sample Description

The sample included 245 male undergraduate students between the ages of 18 and 48 ( $M = 21.08$ ,  $sd = 4.09$ ). Of the sample, 26% were in the first year of college, 36% were in the second year, 22% were in the third year, and 16% were in the fourth year of college. Thirty-seven percent reported a relationship length of 3 months to one year. Forty-nine percent reported a relationship length of 1 to 5 years. Fourteen percent reported being in the current relationship for more than five years. Cohabitation with their partner was reported by 18% of the sample, and 4 % reported being married. The sample ethnicity was 97% Caucasian, 2% were Native American, and 1% were African American. Male students who identified themselves as being in a romantic relationship for at least 3 months, and that they were “in love” were eligible for the study. Participants completed questionnaire packets during regularly scheduled psychology courses, and received extra credit in exchange for their participation.

#### Preliminary Distribution Analyses

Appendix A shows frequency distributions for variables included in these analyses. Variables that were not normally distributed as indicated by skewness or kurtosis were converted to standard scores for regression and correlation analyses. Because the six measures of relationship satisfaction (Affection Satisfaction, Sexual

Behavior Satisfaction, Sex Frequency Satisfaction, Appearance Satisfaction, and RAS Score) were highly correlated, these were summed to create a relationship satisfaction composite score, referred to henceforth as Relationship Satisfaction. Similarly, the two variables, SEM Frequency (in one month) and SEM Hours (per week) were highly correlated ( $r = .77$ ). Therefore, SEM Hours was selected as the more precise variable of the two for use in all subsequent analyses (hence referred to as SEM Use). For items 12a – 12l of the EMUQ (self-reported consequences of SEM use) Likert scores were converted to the percentages of endorsement for ease of interpretation. For example, if a person responded with a frequency level of 4, to indicate 40% - 60%, they were given a score of 50%.

#### SEM Use Patterns

Of the total sample ( $N = 245$ ), 148 (60%) participants reported using erotic materials during the past month. Table 1 presents EMQ data regarding average SEM use patterns for participants who reported SEM use. Readers can refer to Table 1 and Appendix A, for details regarding EMQ variable distributions. SEM users reported using SEM on an average of 8.6 days during the past month and 3 hours per week during the past month. Most SEM use was solitary (average of 13.28% shared with partner). SEM was primarily accessed via the internet (65.27%) and was primarily in the form of video (55.45%). SEM users rated their own sex drive as average, compared to others, and reported minimal sexual performance difficulties.

Table 1. Erotic Material Use Questionnaire Means (SD) for SEM Users (n = 148)

EMQ Item	Item #	Range	Mean (SD)
SEM Consumption			
Days past month	3	0 – 28	8.61 (8.28)
Hours per week	4	0 – 35	3.01 (4.58)
Perceived control	8	1 – 7	5.85 (1.75)
Shared SEM Use			
Partner aware	6	1 – 7	4.40 (2.38)
Partner objects	7	1 – 7	2.93 (2.07)
SEM use shared (%)	11	0 – 100	13.28 (24.10)
SEM Content			
Source			
video %	9	0 – 100	18.90 (31.76)
magazine %	9	0 – 100	15.66 (27.37)
internet %	9	0 – 100	65.27 (39.34)
Modality			
images %	10	0 – 100	33.81 (32.75)
video %	10	0 – 100	55.45 (34.67)
story %	10	0 – 50	4.87 ( 11.17)
chatroom %	10	0 – 95	2.36 (11.52)
phone sex %	10	0 – 78	1.96 (9.39)
Sexual Functioning			
Sex Drive	13	1 – 5	3.61 (0.81)
Perform Probs %	14	1 – 5	1.38 (0.83)

Table 2. SEM User Versus Non-User Comparisons

Variables	Non-Users	SEM Users	Total Sample
<i>Background Factors</i>			
Age	20.41 (3.95)	21.52 (4.14)*	21.08 (4.09)
College Year	2.29 (0.88)	2.32 (1.26)	2.31 (1.20)
Relationship Length	1.69 (0.65)	1.81 (0.68)	1.76 (0.67)
Age of Initial Exposure	13.5 (3.44)	12.30 (2.68)**	12.77 (3.05)
<i>Sexual Activities</i>			
Sex with partner/month	7.34 (7.04)	9.47 (7.53)*	8.63 (7.40)
Sex with other/month	0.05 (0.51)	0.41 (1.32)*	0.27 (1.08)
SEM use (hrs/wk)	0.00 (0.00)	3.01 (4.58)**	1.82 (3.85)
<i>Core Relationship Indicators</i>			
Intimacy	35.00 (6.94)	34.84 (5.95)	34.91 (6.35)
Autonomy	35.27 (5.17)	32.91 (6.07)**	33.84 (5.84)
Equality	48.09 (9.32)	43.01 (9.25)**	45.04 (9.59)
Affection	12.89 (4.77)	11.28 (2.40)**	11.92 (3.61)
Conflict Resolution	22.42 (4.17)	20.61 (5.58)**	21.33 (5.13)
<i>Satisfaction Measures</i>			
Sexual Activity Freq. Sat.	8.31 (2.14)	6.98 (2.73)**	7.51 (2.60)
Partner Appearance Sat.	9.04 (1.97)	7.80 (1.71)**	8.29 (1.92)
Sexual Behavior Satisfaction	8.77 (1.67)	7.45 (2.51)**	7.98 (2.31)
Partner Affection Sat.	8.87 (1.42)	7.98 (1.91)**	8.33 (1.79)
RAS Score	30.77 (3.83)	27.67 (4.63)**	28.90 (4.59)
Relat. Sat. <sup>1</sup>	1.95 (3.14)	-.96 (4.39)**	.19 (4.19)

<sup>1</sup> Summed composite of Affection Satisfaction, Sexual Behavior Satisfaction, Sex Frequency Satisfaction, Appearance Satisfaction, and RAS Score. \* Difference between groups is significant at  $p < .05$  \*\* Difference is significant at  $p < .01$

### SEM User vs. Non-User Comparisons

Table 2 presents means and standard deviations for SEM Users and Non-Users, for demographic and relationship variables. Astrices indicate statistically significant between group differences by independent sample T – test analysis. Due to the large number of comparisons conducted, a statistical significance criterion of  $p < .01$  was used. Variables presented are grouped by background factors, sexual activities, satisfaction with partner variables, and global relationship indicators. Among background factors, age of initial exposure to erotic materials was significantly lower for SEM users. Using the corrected criterion of  $p < .01$ , there were not significant differences between SEM users and non-users for frequency of sexual activity with their partner or with other persons. However, there was a significant trend for SEM users to report more sexual activity with persons other than their partner ( $p = .012$ ). The test for SEM Use confirmed that SEM users viewed significantly more erotic materials than non-users.

SEM users scored significantly lower for four of five core relationship factors. Autonomy, equality, affection, and conflict resolution were significantly lower for SEM users, while intimacy was not significantly different between SEM users and non-users. For measures of relationship satisfaction, SEM users consistently reported lower satisfaction including lower satisfaction with their partner's appearance and affection, as well as lower satisfaction with their partner's sexual behavior, and the frequency of their sexual activity. Similarly, the score for RAS and the composite Relationship Satisfaction score were significantly lower for SEM users. SEM users were not significantly different from non-users for satisfaction with their own appearance.



### Self-Reported Outcomes of Erotic Material Use

Items 12a – 12l of the EMUQ asked participants to indicate how often (reported in percentage) each of twelve desirable and undesirable events occurred within 12 hours of their uses of erotic materials, during the past month. Table 3 summarizes these self-report data for the 148 participants who reported SEM use.

On average, SEM users reported that following 47% of SEM use, they experienced increased fantasies about their partner, while increased fantasies for persons other than their partner were experienced following 50% of SEM use. Similarly, SEM users reported increased desire for their partner following 48% of SEM use and decreased partner desire following 20% of SEM use. SEM users reported that sexual activity with their partner followed 35% of SEM use, while sexual activity with persons other than their partner followed 15% of SEM use. Among feelings experienced by SEM users following SEM use, guilt was endorsed as occurring most frequently, at 27%. Anxiety feelings followed 20% of SEM use and feelings of depression followed 9% of SEM use, on average. Masturbation followed 61% of SEM use.

Table 4 presents the bivariate correlation matrix showing the strength of linear relationships between SEM use and relationship factors for all participants. SEM use was significantly correlated ( $p < .01$ ) with increased frequency of sexual activity with persons other than partner ( $r = .21$ ), and age ( $r = .26$ ). SEM use was significantly correlated with decreased relationship satisfaction (composite) ( $r = -.38$ ), decreased satisfaction with sexual activity with partner ( $r = -.32$ ), decreased satisfaction with partner appearance ( $r = -.34$ ), and decreased relationship equality ( $r = -.26$ ). Relationship satisfaction (composite) was significantly correlated ( $p < .01$ ) with increased satisfaction with sexual

activity with partner ( $r = .92$ ), increased satisfaction with partner appearance ( $r = .76$ ), increased relationship equality ( $r = .72$ ), increased relationship affection ( $r = .57$ ), increased relationship conflict resolution ( $r = .45$ ), increased relationship autonomy ( $r = .22$ ), and increased relationship intimacy ( $r = .48$ ).

Table 3. Self-Reported Consequences of SEM Use Among SEM Users (N = 148)

Outcome	Mean % Endorsed (SD)	Outcome	Mean % Endorsed (SD)
A. Increased partner fantasies	46.79 (36.47)	G. Increased other fantasies	50.30 (38.80)
B. Increased partner desire	48.51 (35.18)	H. Sexual activity other	14.67 (30.46)
C. Sexual activity partner	35.02 (35.29)	I. Masturbation	61.01 (38.03)
D. Decreased desire partner	20.07 (28.59)	J. Guilt feelings	27.03 (39.88)
E. Argument with partner	10.61 (23.22)	K. Anxiety feelings	20.37 (34.64)
F. Increased other desires	42.06 (39.14)	L. Depression feelings	8.95 (19.62)

Relationship satisfaction (composite) was significantly correlated with decreased frequency of sexual activity with persons other than partner ( $r = -.28$ ), decreased relationship length ( $r = -.37$ ), decreased age ( $r = -.47$ ). Sexual activity with partner frequency was significantly correlated ( $p < .01$ ) with decreased relationship length ( $r = -.18$ ). Relationship satisfaction and sexual activity with partner frequency were not significantly correlated.

Table 5 shows bivariate correlations between relationship satisfaction and other relationship factors for the sample of those who denied using any SEM ( $n = 97$ ; non-users). For non-users, relationship satisfaction (composite) was significantly correlated with increased satisfaction with sexual activity with partner ( $r = .88$ ), relationship equality ( $r = .60$ ), relationship affection ( $r = .54$ ), and relationship intimacy ( $r = .43$ ). Sexual activity with partner frequency was significantly correlated with decreased relationship length ( $r = -.18$ ). Relationship Satisfaction and Sexual Activity Frequency were not significantly correlated.

Table 6 shows bivariate correlations between SEM use and relationship factors for the subsample of SEM users ( $n = 148$ ). SEM use was significantly correlated ( $p < .01$ ) with decreased relationship satisfaction ( $r = -.33$ ), decreased satisfaction with sexual activity with partner ( $r = -.30$ ), decreased satisfaction with partner appearance ( $r = -.34$ ), decreased relationship equality ( $r = -.24$ ), and increased age ( $r = .29$ ). SEM sharing was significantly correlated with increased relationship intimacy ( $r = .27$ ). Relationship satisfaction was significantly correlated with increased satisfaction with sexual activity with partner ( $r = .94$ ), increased satisfaction with partner appearance ( $r = .84$ ), increased relationship equality ( $r = .78$ ), increased relationship affection ( $r = .68$ ), increased conflict resolution ( $r = .51$ ), increased intimacy. Relationship satisfaction was significantly correlated with decreased relationship length ( $r = -.46$ ), decreased age ( $r = -.54$ ), and decreased frequency of sexual activity with persons other than partner ( $r = -.30$ ).

Table 4. Bivariate Correlations Between SEM Use and Relationship Variables for Total Sample (N = 245)

	SEM Hours	Relat. Satisf.	Sex Act Freqncy	Sex Satisf.	Appear Satisf.	Equality	Affect	Conflict Resolut.	Auton.	Intimcy.	Relat. Length	Age
Relationship Satisfaction	-.38**	-										
Sex Activity Frequency	.21**	.04	-									
Sex Activity Satisfaction	-.32**	.92**	.14*	-								
Appear Satisfaction	-.34**	.76**	-.08	.56**	-							
Equality	-.26**	.72**	.02	.56**	.36**	-						
Affection	-.16*	.57**	-.04	.38**	.66**	.38**	-					
Conflict Resolution	-.13*	.45**	.02	.27**	.22**	.56**	.27**	-				
Autonomy	-.12	.22**	.02	.18**	.17**	.24**	.25**	.25**	-			
Intimacy	-.09	.48**	.13	.38**	.29**	.43**	.28**	.24**	-.01	-		
Relationship Length	.15*	-.37**	-.18**	-.35**	-.27**	-.25**	.56**	-.16*	.23**	-.15*	-	
Age	.26**	-.47**	-.05	-.41**	-.46**	-.24	-.18**	-.10	-.16**	-.21**	.37**	-
Sex with Non partner	.21**	-.28**	-.08	-.15**	-.20**	-.35**	-.27**	-.26**	-.17**	-.05	.03	.05

Note: Sex Satisfaction and Appear Satisfaction are factors included in the Relationship Satisfaction composite.

\* Significant at  $p < .05$ , \*\* Significant at  $p < .01$ .

Table 5: Bivariate Correlations Between SEM Use and Relationship Variables for SEM Non-Users (n = 97)

	Relat. Satisfact.	Sex Act. Freq.	Sex Act. Satisfact.	Appear. Satisfact.	Equality	Affect	Conflict Resolut.	Autonomy	Intimacy	Relat. Length	Age
Relation Satisfaction	-										
Sex Act. Frequency	.03	-									
Sex Act. Satisfaction	.88**	.07	-								
Appear. Satisfaction	.58*	-.18	.25*	-							
Equality	.60**	.10	.44**	.09	-						
Affection	.54**	-.05	.24*	.77**	.12	-					
Conflict Resolution	.18	.17	.10	-.16	.47**	-.02	-				
Autonomy	.19	.10	.18**	.14	.26**	.06	.21*	-			
Intimacy	.43**	.05	.25*	.20	.36**	.107	.18	-.07	-		
Relat. Length	-.15	-.18**	-.08	-.06	-.14	.14	-.17*	-.17	-.11	-	
Age	-.27**	-.05	-.12	-.34**	.04	-.04	.08	-.20*	-.11	.14	-
Sex Non-Partner	.08	-.03	.08	.05	-.04	-.04	.04	.02	.09	-.11	-.01

Note: Sex Satisfaction and Appear Satisfaction are factors included in the Relationship Satisfaction composite.  
 \* Significant at p< .05, \*\* Significant at p<.01.

Table 6. Bivariate Correlations Between SEM Use and Relationship Variables for SEM Users (n = 148)

	SEM Hours	Shared SEM	Relat. Satisf.	Sex Freq.	Sex Satisf.	Appear. Sat.	Equality	Affect	Conflict Resol.	Auton.	Intim.	Relat. Length	Age
Shared SEM Use	.07	-											
Relation. Satisfaction	-.33**	.04	-										
Sex Activity Frequency	.21*	.39*	.12	-									
Sex Satisfaction	-.30**	.16	.93**	.24*	-								
Appear Satisfaction	-.34**	.03	.84**	.06	.70**	-							
Equality	-.24**	.03	.78**	.04	.59**	.60**	-						
Affection	-.16*	.00	.68**	-.05	.54**	.51**	.69**	-					
Conflict Resolution	-.09	-.06	.51**	-.01	.29**	.37**	.59**	.54**	-				
Autonomy	-.04	-.20*	.16*	.01	.17*	.11	.17*	.22**	.23**	-			
Intimacy	-.12	.27**	.57**	.18*	.49**	.40**	.51**	.57**	.29**	-.03	-		
Relation. Length	.16*	-.08	-.46**	-.23**	-.48**	-.42**	-.30**	-.29**	-.14	.21*	-.33**	-	
Age	.29**	-.17*	-.54**	-.08	-.53**	-.52**	-.37**	-.34**	-.15	-.10	-.29**	.49**	-
Sex Non-Partner	.17*	.07	-.30**	-.13	-.16	-.20**	-.42**	-.46**	-.30**	-.19*	-.09	.04	.04

Note: Sex Satisfaction and Appear Satisfaction are factors included in the Relationship Satisfaction composite.

\* Significant at  $p < .05$ , \*\* Significant at  $p < .01$ .

Table 7. Bivariate Correlations Between SEM Use and Self-reported Consequences of SEM Use for SEM Users (n = 148)

	video	increased partner fantasy	increased desire partner	increased partner sex	decreased desire partner	partner arguments increase	other desire increase	sex non Partner	guilt increase	anxiety increase	Depress. Increase	Relat Satisf	Sex Freq.
increased partner fantasy	.10	-											
increased desire partner	.03	.78**	-										
increased partner sex	.37**	.39**	.37**	-									
decreased desire partner	.01	-.39**	-.39**	-.20*	-								
partner argument increase	.11	-.07	-.19*	.08	.14	-							
other desire increase	-.07	-.28**	-.27**	-.10	.56**	.18*	-						
sex other increase	.03	-.20*	-.23**	-.00	.050	.19*	.34**	-					
guilt increase	-.21*	-.29**	-.28**	-.17*	.50**	.12	.50**	.30**	-				
anxiety increase	-.15	-.18*	-.14	-.21**	.48**	-.01	.46**	.12	.84**	-			
Depression increase	-.06	-.05	-.24**	-.02	.37**	.14	.36**	.20*	.57**	.53**	-		
Relationship Satisfaction	.06	.44**	.38**	.26**	-.63**	-.14	-.58**	-.14	-.43**	-.41**	-.28**	-	
Sex Frequency	.40**	.16*	.12	.53**	-.05	.15	-.06	-.08	-.15	-.17*	.04	.12	-
SEM Hours	.04	-.02	-.11	.05	.41**	.04	.21**	-.01	.32**	.28**	.44**	-.33**	.21*

\* Significant at p< .05, \*\* Significant at p<.01.

Table 7 shows bivariate correlations between SEM use (hours) and self-reported consequences of SEM use for the subsample of SEM users ( $n = 148$ ). SEM use was significantly ( $p < .01$ ) correlated with decreased desire for partner ( $r = .41$ ) and increased desire for persons other than partner ( $r = .21$ ). In addition, SEM use was significantly correlated with increased feelings of guilt ( $r = .32$ ), anxiety ( $r = .28$ ), and depression ( $r = .44$ ).

#### Regression Analyses

The present study was designed to identify potential links between routine SEM usage and relationship satisfaction as well as sexual activity frequency. Regression analysis was used to identify if combinations of variables would prove useful in the prediction of relationship satisfaction, and frequency of sexual activity, relative to previously identified relationship predictors. To correct for multiple analyses, a statistical significance criterion of  $p < .01$  was used for interpretation of overall model tests as well as the strength of individual predictors.

#### *Prediction of Relationship Satisfaction (Total Sample).*

To examine the relationship between SEM use and relationship satisfaction for the total sample, multiple regression analysis was performed. Predictors included quantity of SEM use (SEM Hours), and the five core relationship variables (Conflict Resolution, Intimacy, Equality, Affection, and Autonomy) previously identified as important predictors of relationship satisfaction, to establish the effect of SEM use in their context. Length of the relationship was also included as predictor. All predictor variables were simultaneously entered into the regression model.



The overall model for Relationship Satisfaction was statistically significant ( $R^2 = .71, p < .01$ ; see Table 8). As hypothesized, SEM Hours was a significant predictor of Relationship Satisfaction ( $\beta = -.15$ ), with higher hours of SEM use related to lower relationship satisfaction. Increased Relationship Length was also a significant predictor of lower Relationship Satisfaction ( $\beta = -.13$ ). As expected, increased relationship Intimacy ( $\beta = .17$ ) Equality ( $\beta = .46$ ), and Affection ( $\beta = .28$ ) were significant predictors of increased relationship satisfaction, while relationship Autonomy and Conflict Resolution were not.

Table 8. Summary of Regression Analysis for Variables Predicting Relationship Satisfaction for All Participants (N = 245)

Overall model is significant ( $p < .01$ ),  $R^2 = .71$

Variable	$\beta$	$t$	sig	Zero Order	partial	part
SEM Use*	-.18	-4.80	.00	-.38	-.30	-.17
Relationship Length	-.14	-3.72	.00	-.37	-.24	-.13
Conflict Resolution	.05	1.23	.22	.45	.10	.04
Intimacy	.17	4.06	.00	.48	.26	.15
Autonomy	-.01	-.37	.72	.22	-.02	-.01
Equality	.43	8.55	.00	.72	.49	.31
Affection	.29	7.28	.00	.57	.43	.26

\* Consumption of erotic materials during the past 30 days in hours.

*Prediction of Relationship Satisfaction (SEM Users).*

To further examine the impact of SEM use on relationship satisfaction for SEM users specifically, multiple regression analysis was performed for this subsample of

participants (N = 148). Predictors found to be significant in the initial analyses were included (SEM Hours, Relationship Length Relationship Intimacy, Equality, and Affection). Additionally, SEM Sharing (binary variable, 0 = SEM use always alone, and 1 = some portion of SEM use shared) was included to test the effect of this type of SEM use. Finally, an SEM Hours X SEM Sharing interaction variable was included as a predictor to examine the moderating effect of SEM use shared with a partner when examining relationship satisfaction. Predictors were entered simultaneously into the multiple regression model.

The overall Relationship Satisfaction model for SEM users was significant ( $R^2 = .74, p < .01$ ; see Table 9). SEM Hours was a significant predictor ( $\beta = -.83$ ) of decreased satisfaction, while Shared SEM was not. Affection ( $\beta = .25$ ) and Equality ( $\beta = .43$ ) were both significant predictors of increased relationship satisfaction, while Intimacy and Relationship Length were nearly significant. Additionally, the SEM Hours X SEM Sharing interaction was significant ( $\beta = .71$ ; see Figure 1). Post-hoc examination of bivariate correlations indicates that, for participants who reported exclusively using SEM alone, increased SEM Hours was significantly correlated with decreased relationship satisfaction ( $r = -.67$ ). However, for participants who reported sharing SEM use with their partner, the correlation between SEM hours and relationship satisfaction was non-significant ( $r = -.07$ ). Figure 1 illustrates the SEM Hours X SEM Sharing interaction, for SEM users (N = 148). While SEM Sharing appeared to moderate the effect of SEM on relationship satisfaction, SEM users' average relationship satisfaction remained lower than that of non-users, whether SEM use was shared or not.

*Predictions of Sexual Activity Frequency (Total Sample).*

To examine the relationship between SEM use and sexual activity frequency for the total sample, multiple regression analysis was performed. Predictors included hours of SEM use, and the five variables (conflict resolution, intimacy, equality, affection, and autonomy) previously identified as important predictors of relationship satisfaction, to establish the effect of SEM in their context. Length of relationship was included as an additional predictor. All predictor variables were simultaneously entered into the regression model.

Table 9. Summary of Regression Analysis for Variables Predicting Relationship Satisfaction for SEM Users (N = 148)

Overall Model is significant ( $p < .01$ ),  $R^2 = .72$

Variable	$\beta$	$t$	sig	Zero Order	partial	part
SEM Use*	-.312	-4.54	.00	-.33	-.36	-.21
SEM Sharing	.01	.28	.78	.11	.02	.01
Relationship Length	-.13	-2.40	.02	-.46	-.20	-.11
Intimacy	.12	2.05	.04	.57	.17	.09
Affection	.23	3.40	.00	.68	.28	.15
Equality	.39	5.85	.00	.75	.45	.26
SEM Use X SEM Sharing	.23	3.23	.00	.17	.27	.15

\* Consumption of erotic materials during the past 30 days in hours.

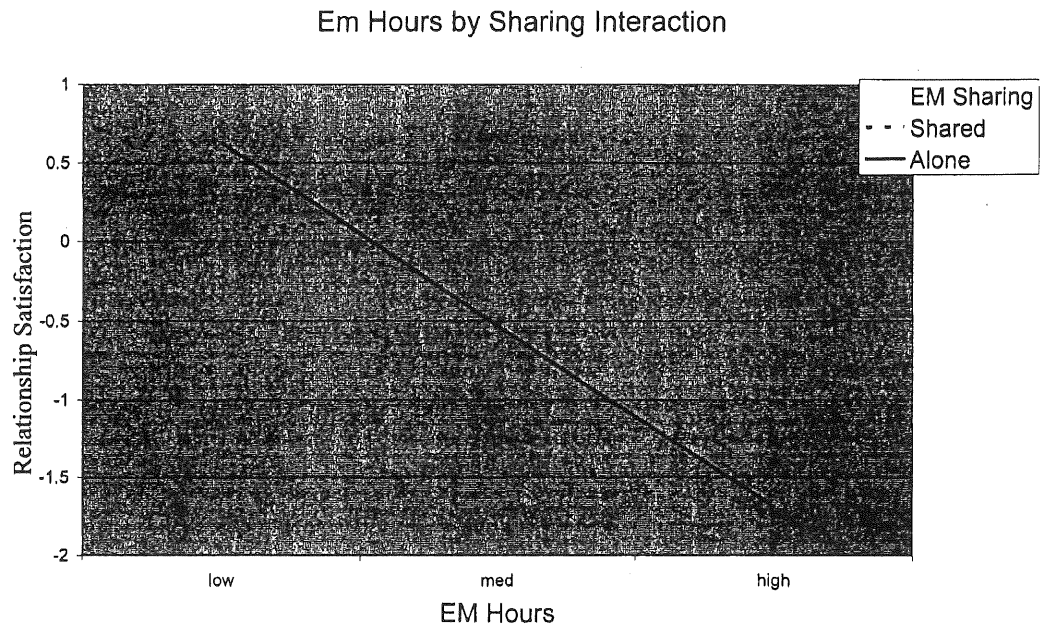


Figure 1. SEM Hours X SEM Shared Interaction

The overall model for Sexual Activity Frequency was statistically significant ( $R^2 = .11, p < .01$ ; see Table 10). SEM Hours was a significant predictor ( $\beta = .24$ ), with higher hours of SEM use related to increased frequency of sexual activity. Longer Relationship Length ( $\beta = -.21$ ) was a significant predictor of decreased Sexual Activity Frequency. None of the core relationship factors, Intimacy, Autonomy, Equality, Affection, and Conflict Resolution were significant predictors of Sexual Activity Frequency, though Intimacy was nearly significant.

Table 10. Summary of Regression Analysis for Variables Predicting Sexual Activity Frequency for All Participants (N = 245)

Overall Model is significant ( $p < .01$ ),  $R^2 = .11$

Variable	$\beta$	$t$	sig	Zero Order	partial	part
SEM Use	.24	3.73	.00	.21	.24	.23
Relationship Length	-.21	-3.22	.00	-.18	-.21	-.20
Conflict Resolution	.00	.04	.97	.02	.00	.00
Affection	.09	-1.25	.21	-.04	-.08	-.08
Intimacy	.14	1.98	.05	.13	.13	.12
Autonomy	.02	.27	.79	.02	.02	.02
Equality	.00	.02	.98	.02	.00	.00

\* Consumption of erotic materials during the past 30 days in hours.

*Prediction of Sexual Activity Frequency (SEM Users).*

To further examine the impact of SEM use on the frequency of sexual activity for participants who reported SEM use, multiple regression analyses was performed for this subsample (N = 148). Autonomy, Conflict Resolution, Intimacy, Affection, and Equality were not included in the analysis as they were not significant predictors in the step one regression model. Therefore, predictors included SEM Hours and Relationship Length as well as SEM Sharing (binary variable with 0 = SEM use always alone, and 1 = some portion of SEM use shared). Finally, a SEM Hours X SEM Sharing interaction variable was included as a predictor to examine the moderating effect of SEM use shared with a partner. All predictors were entered simultaneously.

The overall Frequency of Sexual Activity model for SEM users was significant ( $R^2 = .25$ ,  $p < .01$ ; see Table 11). SEM Sharing was a significant predictor ( $\beta = .36$ ) of increased Sexual Activity Frequency, while SEM Hours and the interaction term, SEM Hours X SEM Shared were not significant predictors. Relationship Length was a nearly significant predictor of decreased Sexual Activity Frequency for SEM users.

Table 11. Summary of Regression Analysis for Variables Predicting Sexual Activity Frequency for SEM Users (N = 148)

Overall Model is significant ( $p < .01$ ),  $R^2 = .25$

Variable	$\beta$	$t$	sig	Zero Order	partial	part
SEM Hours*	-.25	-.71	.47	.21	-.06	-.05
SEM Sharing	.36	4.93	.00	.39	.38	.36
Relationship Length	-.18	-2.22	.03	-.23	-.18	-.16
SEM Hours X SEM Sharing	.48	1.40	.17	.25	.12	.10

\* Consumption of erotic materials during the past 30 days in hours.

## CHAPTER IV

### DISCUSSION

The purpose of this study was to examine the relationship between the use of sexually explicit materials (SEM), frequency of sexual activity, and relationship satisfaction. Additionally, this study explored relative predictive contribution of SEM use to a measure of relationship satisfaction while controlling for several previously identified important factors. It was hypothesized that there would be a negative relationship between SEM use and several relationship factors. Additionally, an interaction between shared SEM and SEM use was hypothesized such that the negative association between SEM use and relationship satisfaction would be moderated by shared SEM use. Conversely, it was hypothesized that SEM use would be positively associated with sex frequency. Finally, it was hypothesized that an interaction between shared SEM and SEM use such that shared SEM users would engage in a higher frequency of sexual activity than non sharing SEM users. These hypotheses were mostly supported.

This study confirmed that the use of sexually explicit materials (SEM) or “pornography” is significantly associated with decreased relationship satisfaction in male college students. Participants (N = 245) were all in significant romantic relationships, and more than half of study participants (60%, n = 148) reported using SEM during the past month. SEM users reported an average of 3 hours per week consumed by SEM use, primarily accessed in the form of video and images on the internet. Not only did SEM

users report significantly lower levels of satisfaction with the current status of their relationship, their partner's sexual behavior and affection, their partner's appearance, and their own appearance; regression analysis showed that SEM use remained a significant predictor of relationship satisfaction for the whole sample as well as SEM users, after core relationship factors (autonomy, equality, intimacy, affection, and conflict resolution) were controlled for.

The current findings were consistent with the application of social learning theory to SEM use. Social learning theory proposes that individuals learn about and develop sexual behaviors from others and their environment. Particular emphasis is placed on the development of expectations which mediate events and individuals' ultimate experience of them as negative or positive (Hogbe & Bryne, 1998; Rotter, 1954). SEM may be the most powerful, if not the only, form of teaching regarding sexual interaction expectations that young men experience (Hovell et al., 1994). Social learning theory predicts that users of SEM would develop thoughts about themselves, their partner, and sexual behavior relative to the materials viewed (i.e. personal fantasies), and expectations for actual sexual interactions. Kenrick, Guitiernes, and Goldberg (1982) found data consistent with this in a study that showed that following SEM use, viewers rated their partners as less sexually attractive. The current study did find that participants reported both increased fantasies about their partner (47%), and increased fantasies about persons other than their partner (50%) following SEM use. Social learning theory proposes that these thoughts and expectations influence how SEM users subsequently behave. In the current study, SEM users reported that following 15% of SEM viewings, they engaged in sexual activities with persons other than their partner. In addition, SEM was



significantly correlated with frequency of sexual activity with individuals other than their partner, (i.e. unfaithfulness) for the total sample ( $r = .21, p < .01$ ). If as proposed, SEM viewers developed expectations regarding real sexual interactions with their relationship partner based on the SEM materials viewed, the contrast between these and their real experiences may explain the relative dissatisfaction reported by SEM users regarding their partners' sexual activity and appearance. SEM use frequency was significantly correlated with decreases in each of these factors ( $p < .01$ ).

Although inferences regarding diminished partner satisfaction and SEM use seem fairly straightforward, explanations for the observed decreases in the broader relationship were more complicated to interpret. Perhaps expectations regarding the importance of sexual activity in the romantic relationship contribute to negative valuations of on-going romantic attachments. SEM users were significantly less satisfied with the frequency of sexual behavior in their relationship ( $p < .01$ ), though a trend supported that they engaged in sexual activity more frequently with their partner and other(s) relative to SEM non-users. These are consistent with Zillmann and Bryant's (1984) finding that participants exposed to SEM overestimated the extent to which infrequent sexual behaviors were practiced in the general population. This team also found that the correlation between sexual activity frequency with partner and relationship satisfaction was statistically significant for SEM users ( $r = .16, p < .05$ ) but not the non-users, suggesting possible differences in the extent to which frequency of sexual activity was valued between the two groups in assessments of relationship satisfaction.

The present data were not derived experimentally and the direction of these relationships pose some remaining interpretative questions. For example, SEM users also

reported significantly lower age of first exposure to SEM. According to the above theory, this may mean that their fantasies and expectations may have developed and repeated over time. These may have even preceded real romantic relationships (the average age of first exposure for SEM users was 12.30 years), possibly making the contrast between SEM derived fantasies and their real relationships stronger and more disappointing. Alternatively, it is possible that SEM users shared other developmental circumstances that accounted for differences from non-users in relating to romantic partners.

Another factor that may contribute to the decreased relationship satisfaction shown by SEM users were their own feelings consequent to their use. On average, SEM users experienced guilt (27%), anxiety (20%) and depression (9%) much of the time following SEM use. Some clinicians have compared compulsive SEM use to addiction. If the experience is comparable, some SEM users may feel driven to use SEM despite contrary personal values and goals. Some may also rely on SEM and consequent sexual activity, including masturbation, as a means of alleviating depression or anxiety (Bancroft, & Vukadinovic, 2004). Repetition of such a cycle could explain the guilt observed in participants in this study and may contribute to general forms of dissatisfaction with current relationships and life in general.

The possible mediating role of shared versus individual SEM use was examined for the first time in this study. Nathan & Joanning (1985) suggested that shared SEM use could be a way for couples to increase positive sexual experiences by increasing intimacy and sexual pleasure. The current study showed that 41% (n = 61) of SEM users shared at least some of their SEM use with their partner. Multiple regression analyses showed that

there was a significant SEM use by SEM sharing interaction ( $\beta = .71, p < .01$ ). For those who only used SEM alone, SEM use was highly correlated with lower relationship satisfaction ( $r = -.67$ ). For those who shared SEM use with their partner, this correlation was still negative, but not significant ( $r = -.07$ ). Relationship satisfaction still appeared to be lower for SEM users than non-users for both those who shared the activity as well as those who engaged in solitary use. While SEM use sharing appeared to moderate the negative impact of SEM use on relationship satisfaction, it still did not appear to contribute, contrary to Nathan and Joanning's (1985) suggestion, to increased relationship satisfaction in men.

Shared SEM use did significantly predict a higher frequency of sexual activity with their partner. It is likely that both partners experienced some level of sexual arousal in response to the SEM that was often followed by sexual activity. The importance of this finding however is unclear. Frequency of sexual activity was not significantly correlated with relationship satisfaction for either the total sample or SEM users. There was a trend toward increased relationship satisfaction with increased partner sexual activity for the SEM users ( $r = .16, p < .05$ ). In addition, none of the core relationship factors previously identified as important contributors to relationship satisfaction (relationship Autonomy, Equality, Intimacy, Affection, and Conflict Resolution) were significant predictors of sexual activity frequency. Only relationship Intimacy approached statistical significance as a predictor. Therefore, this study suggested that couple sharing of SEM may contribute to increased frequency, but probably not satisfaction, of sexual relations.

The regression models predicting relationship satisfaction accounted for high amounts of variance comprising relationship satisfaction ( $r^2$ 's > .70). While SEM use was a significant predictor of relationship satisfaction for the total sample, core relationship factors of affection and equality provided even stronger predictors ( $\beta = .28$  and  $\beta = .46$ , respectively) for both SEM users and non-users. Equality was the strongest of the core relationship factors contributing to relationship satisfaction. Feelings of an equal balance of commitment (e.g. "My partner and I invest equal amounts of time and energy into the relationship") and power (e.g. "My partner treats me and respects me as an equal") appeared to be important contributors to a positive evaluation of the overall relationship. Equality also mitigated against SEM use for both the total sample ( $r = -.26$ ,  $p < .01$ ) and among SEM users ( $r = -.24$ ,  $p < .01$ ). Relationship equality may be associated with expectancies that either decrease SEM-seeking or contribute to relationship discord when it occurs.

For SEM users, the only stronger predictor of relationship satisfaction was the SEM Use X SEM Sharing interaction ( $\beta = .71$ ). Post hoc analyses showed that shared SEM use somewhat moderated the strong association between solitary SEM use and relationship dissatisfaction. While SEM sharing did not contribute to higher satisfaction, solitary SEM use portended even poorer relationship quality. This finding lends itself to multiple interpretations. The regression analysis predicting the frequency of sexual activity among the SEM users indicated that SEM Sharing was a significant predictor ( $\beta = .48$ ) of activity but not physical intimacy or relationship or sexual activity satisfaction. Thus, solitary SEM use should warrant concern for couples and individual and marital

therapists. Present data identified a number of possible concerns regarding solitary SEM use (e.g., negative emotional reactions associated with relationship dissatisfaction).

This study also provides important normative data regarding SEM use in college males. Sixty percent of participants reported SEM use during the previous month. Participants seemed open and willing to disclose sensitive information about their sexual activities. However, whether this is still an under-representation of actual SEM use rates is unknown. Those who did endorse SEM use reported that they primarily consumed SEM in video form on the internet, on an average of 8.6 days during the past month, or three hours per week. The fact that this activity consumes such a significant amount of time among most participants, underscores the need for further research on the impact of SEM use on consumers as well as their relationships.

The fact that the sample was restricted to college men, predominately Caucasian, who reported being "in love" poses a limitation to the external validity of these findings. It is likely that older males, or males in longer relationships would be more adversely affected by SEM use than younger, infatuated males at the beginning of a relationship. Furthermore, it is likely that due to the use of recall in the self-report measure participants may not have accurately recalled their behaviors for the past month, and were likely to underestimate the extent of their SEM use. This study appears to offer a unique assessment of SEM use and relationship satisfaction. However, much further work needs to be done. For example, the gender specific roles often portrayed in SEM (e.g. sexual performance, dominance vs. passiveness) may effect expectations of the male audience in distinctive ways that moderates and often adversely effects romantic relationships. Similarly, the effects of SEM content (e.g., erotic, degrading, violent, etc) warrants much

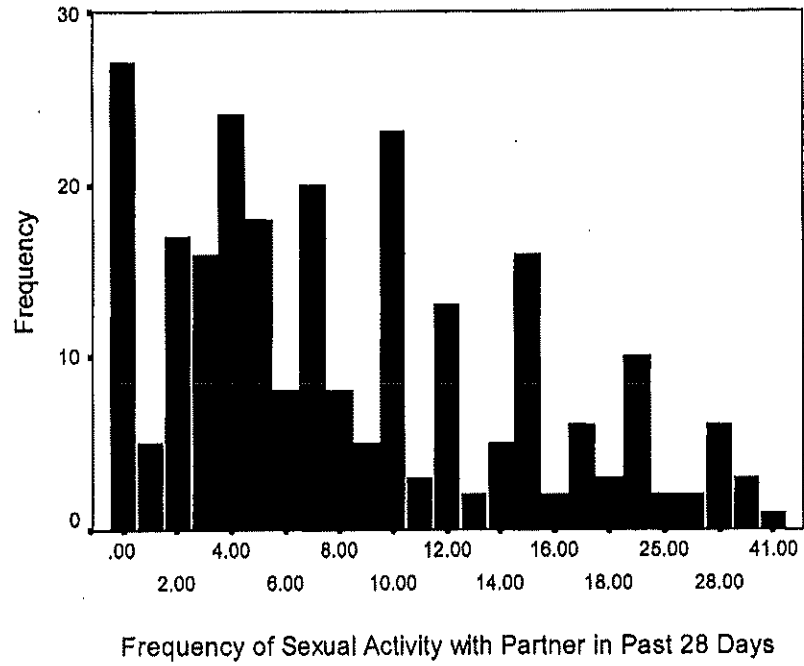
closer attention in future research. It is important to emphasize the complexity of the sequence of SEM exposure, arousal, modeling, and consequences. Data generated in this study were limited to the self reports of male participants. Extensions of this research should examine the concordance of both relationship partners, with separate analysis of the effects of shared and isolated SEM use. In addition, special efforts should be undertaken to recruit a sufficient number of women SEM users to allow examination of the extent to which the observed effects generalize across gender. Experimentally controlled exposure to SEM and subsequent relationship effects would provide the most conclusive evidence regarding effects and clinical implications. It remains possible that some set of collateral developmental factors independently predispose both SEM use and poor relationship maintenance skills (e.g., irritability, sensation seeking, impulsivity, egocentricity, etc.). Furthermore, it may be necessary to determine the extent of any behavior that is secret and incongruent to their partner's impact on relationship satisfaction, and to what extent SEM use is additive.

Ultimately, research should investigate interventions that might prevent or at least mitigate the adverse effects of SEM. This study found that shared SEM use seems to do so but as a clearly failed strategy to enhance relationship quality and closeness. These findings may provide educational benefits to enhance couple understanding of the potential risks posed by SEM use. Finally, studies should aim to establish normative information regarding SEM use and relationship satisfaction measures.

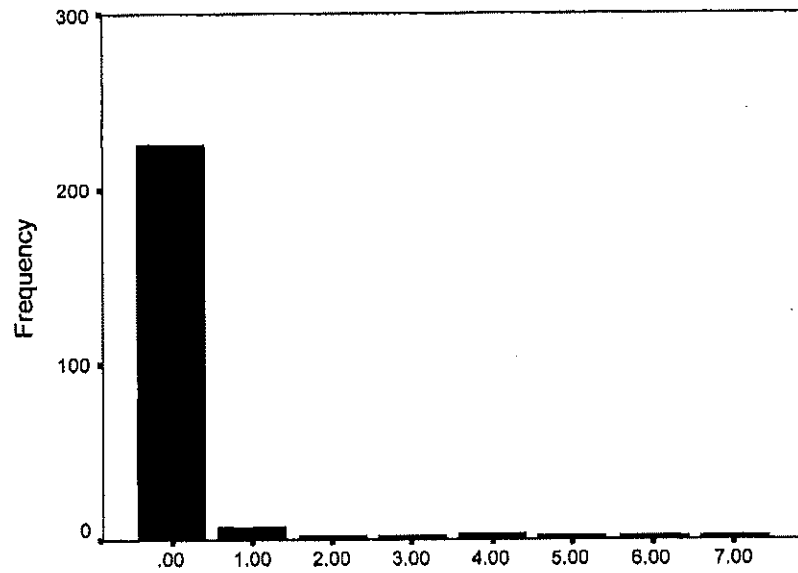
In summary, this study has showed that SEM use is significantly associated with multiple measures of decreased relationship satisfaction. Even in the context of other core relationship factors including autonomy, equality, conflict resolution, affection, and

intimacy, SEM use continued to predict decreased relationship satisfaction. Sharing of SEM use with a romantic partner moderates the severity of the negative impact of SEM, but is not associated with increased relationship satisfaction. Though the expectations regarding sexual activity developed with SEM use appear important, many of the processes that result from SEM use remain to be explored. The investigation of partner's reactions, particularly in experimentally controlled settings and potential interventions may result in recommendations to potentially help lessen negative effects of SEM use for the large population of SEM users. Given the results of this study, and other works that have identified reduced functioning as a result of SEM use, it may be prudent to warn consumers of the potential for SEM use to reduce the overall happiness experienced in their romantic relationships.

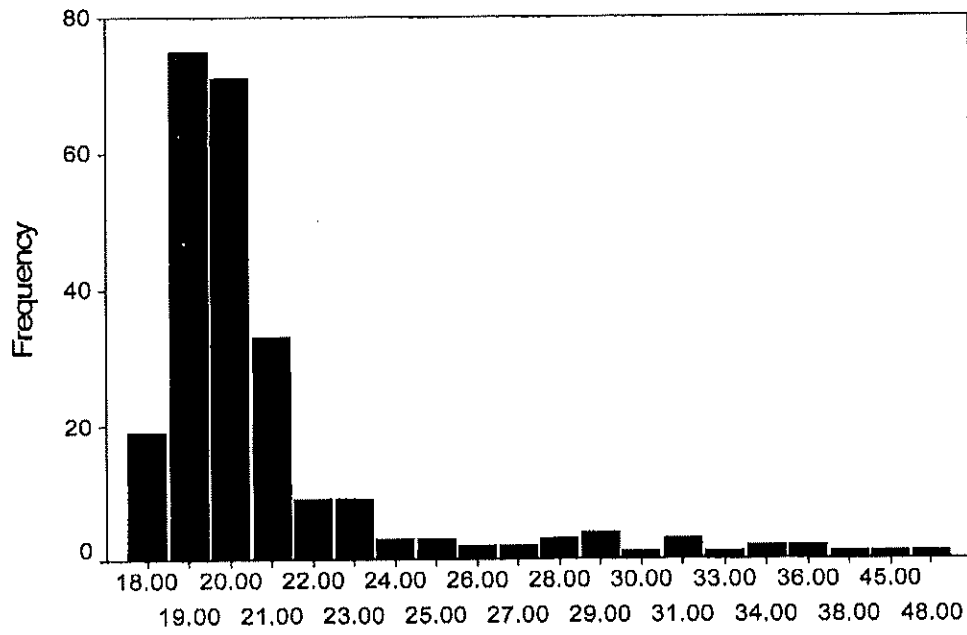
APPENDIX A  
Frequencies







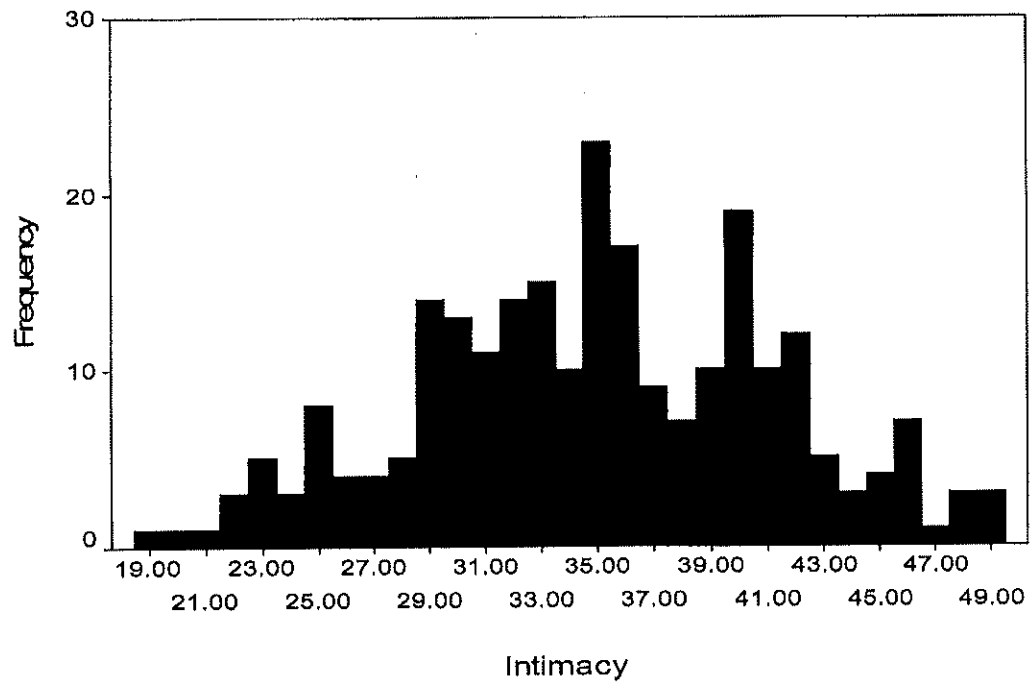
Frequency of Sexual Activity with Non-partner in 28 Days

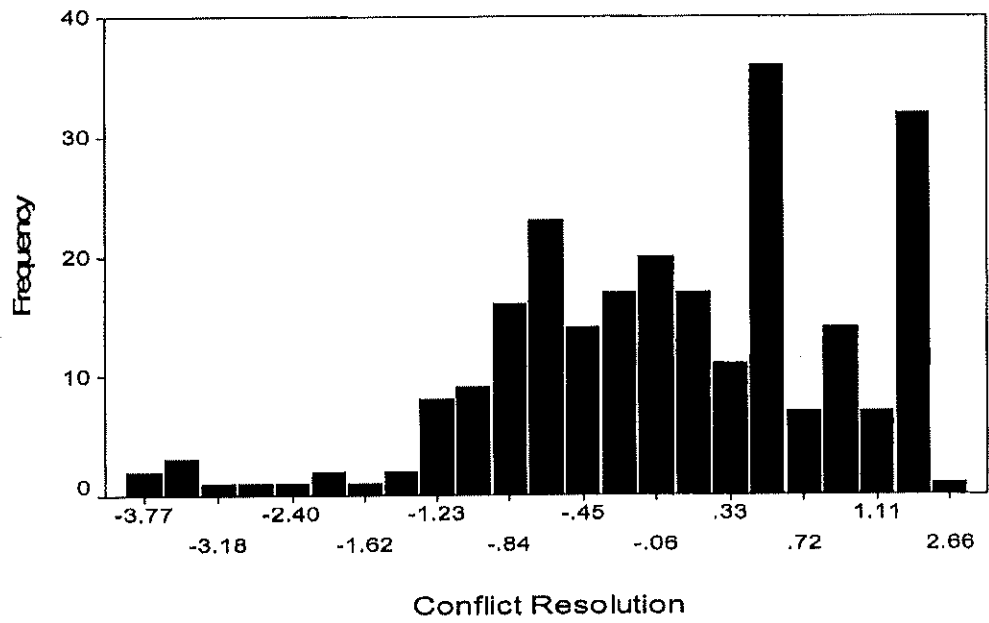
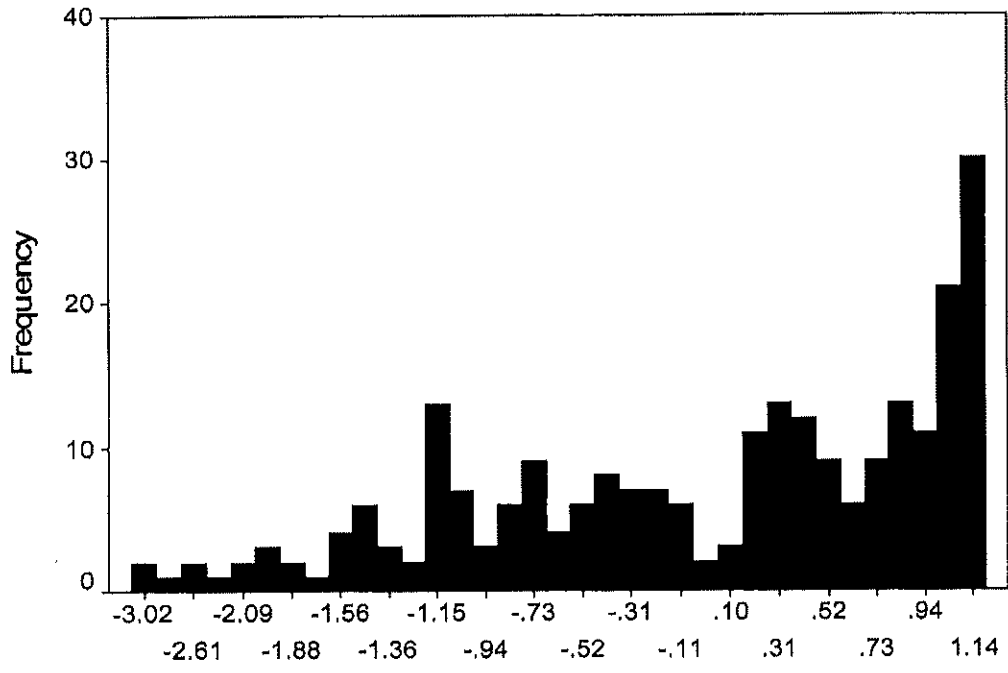


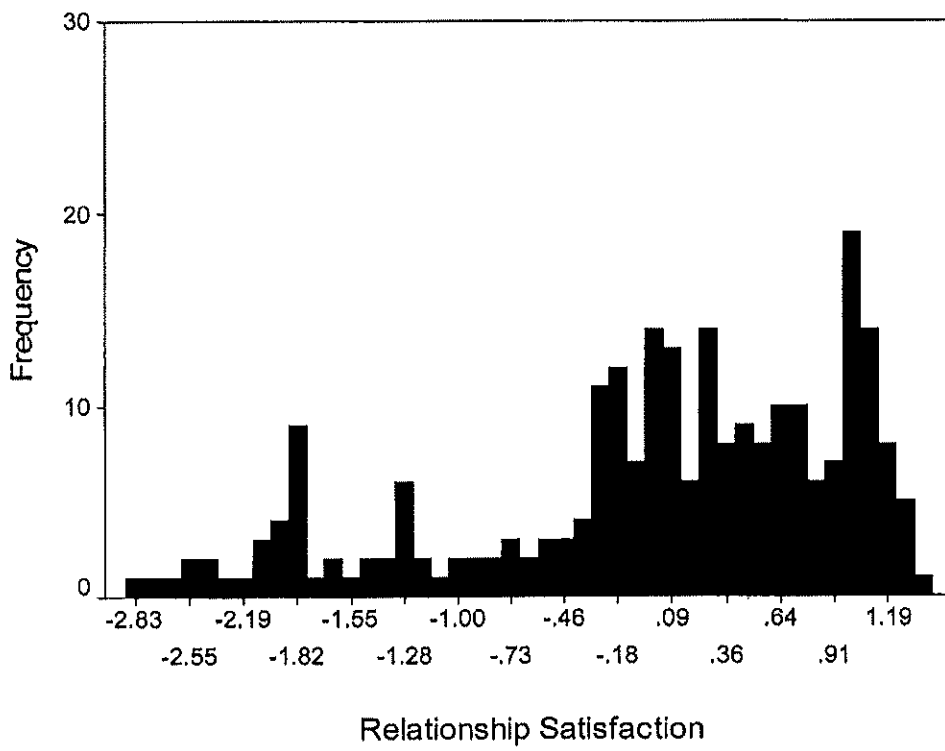
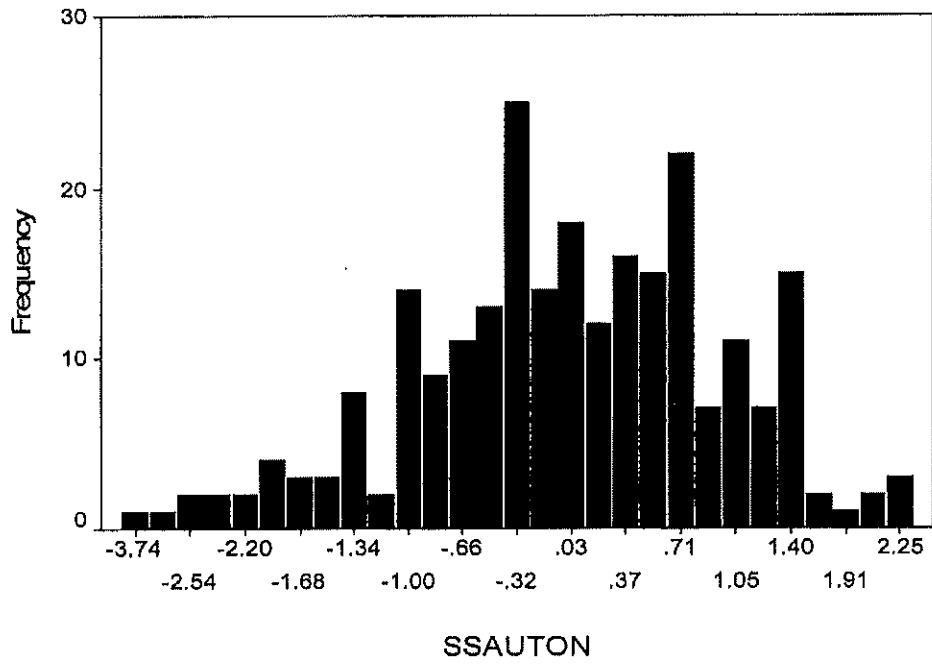
Age



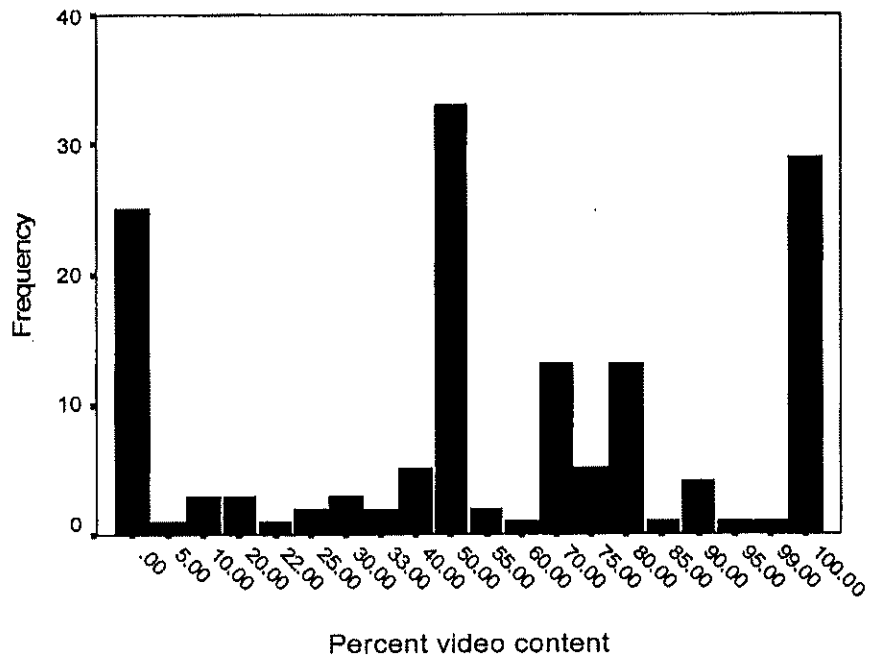
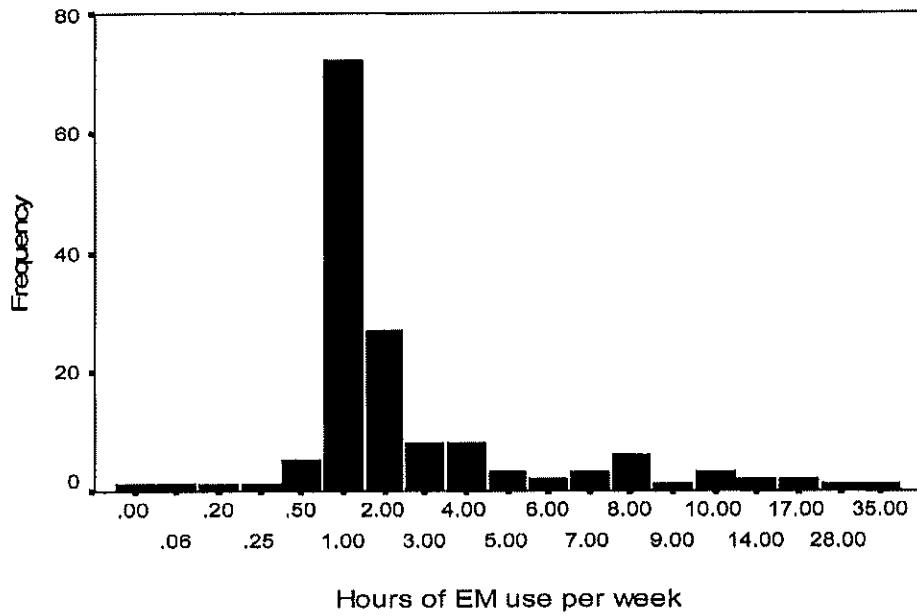
Standard Score Frequencies

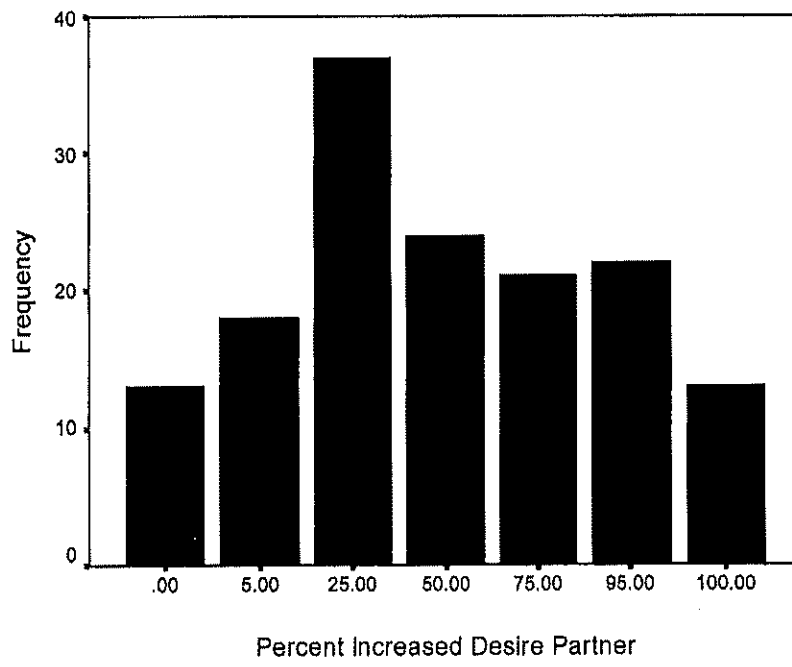
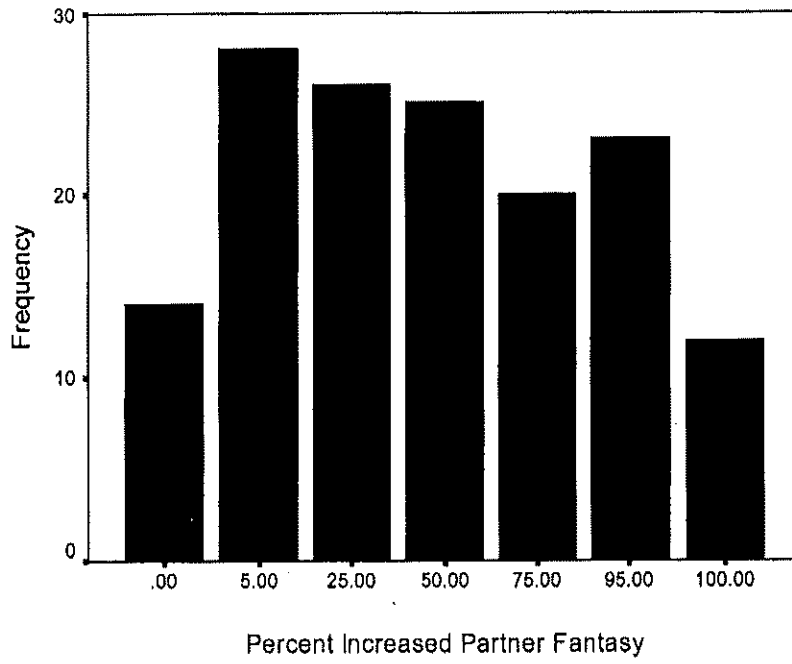


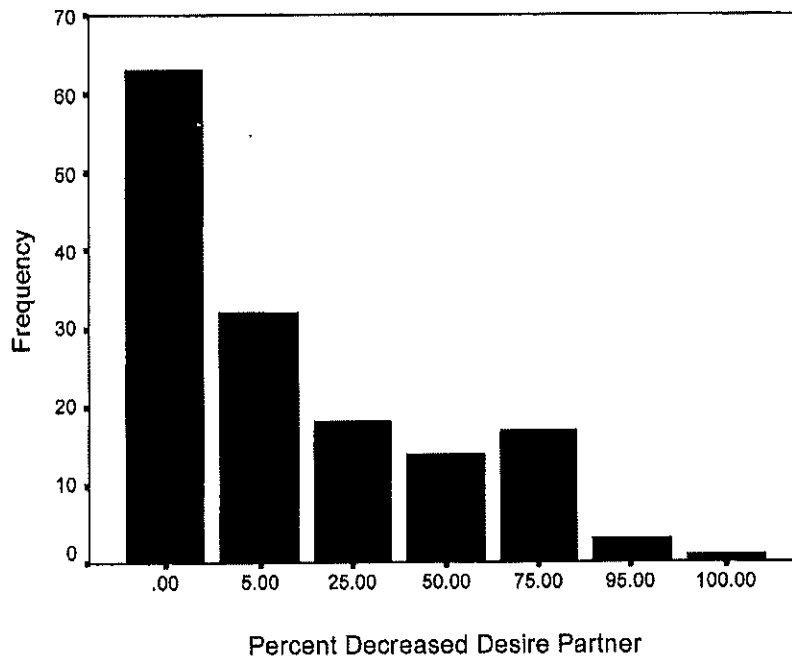
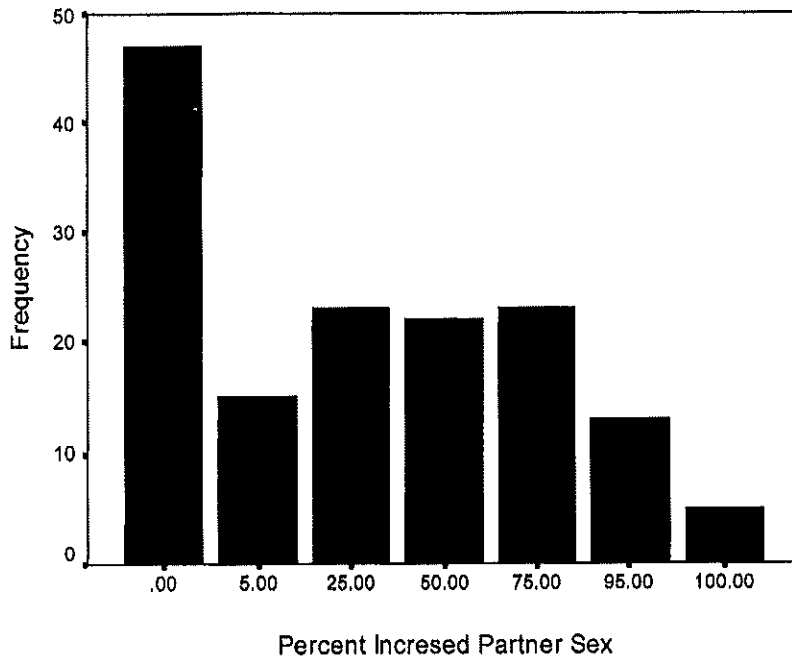


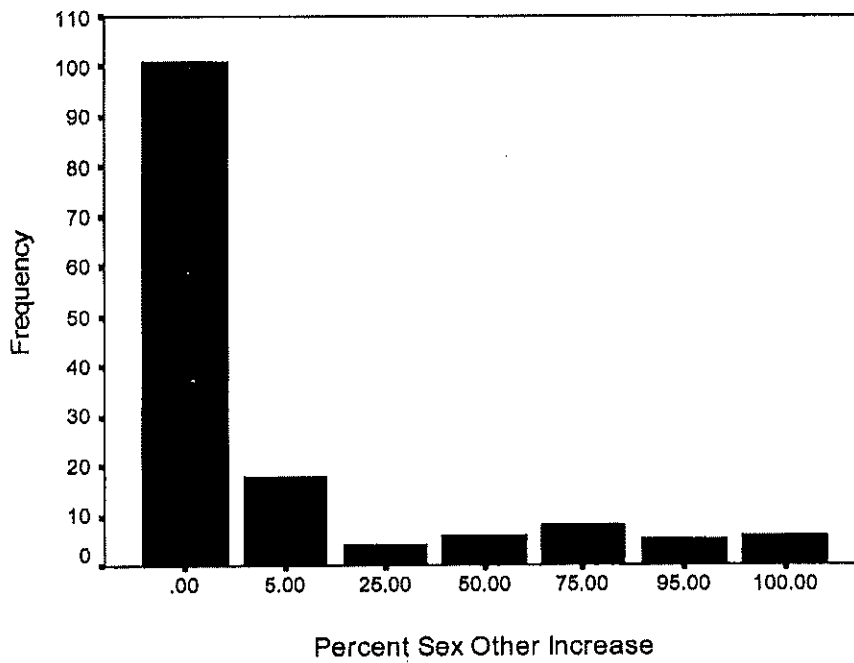
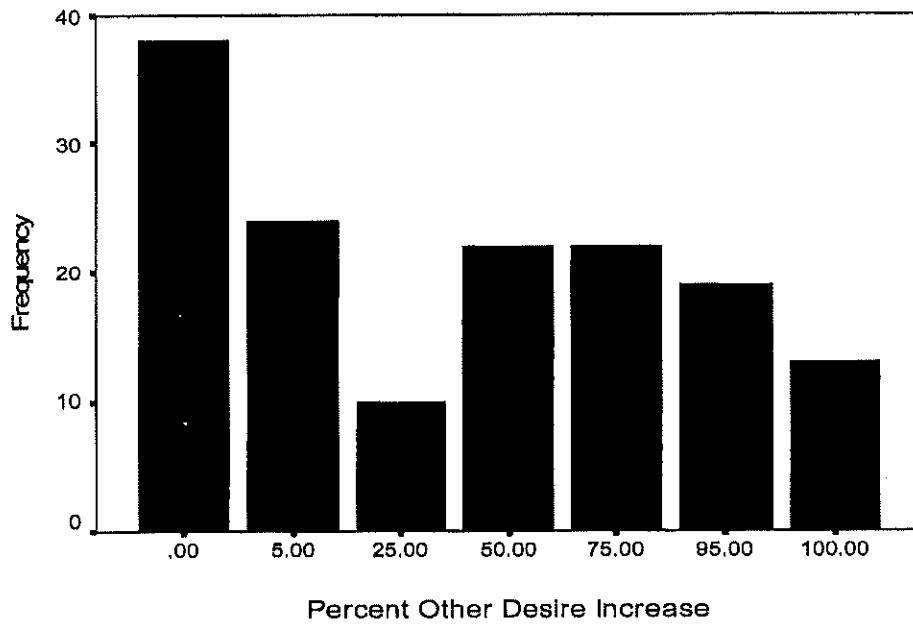


SEM Users Only

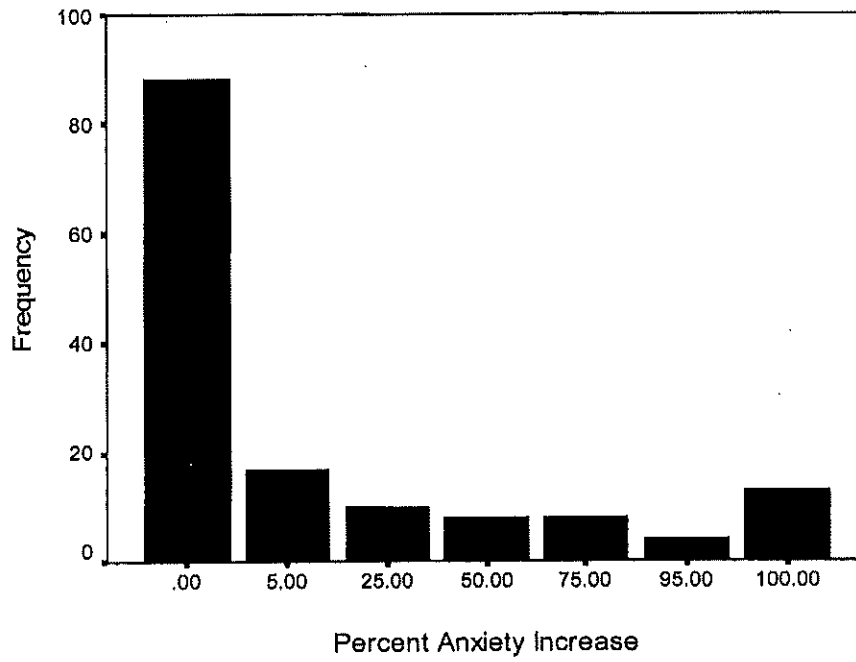
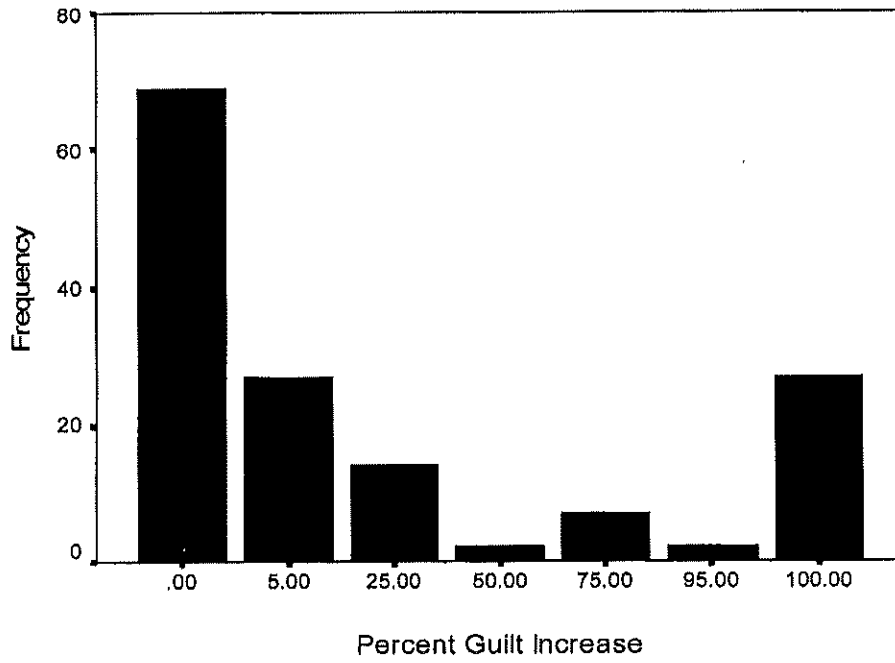


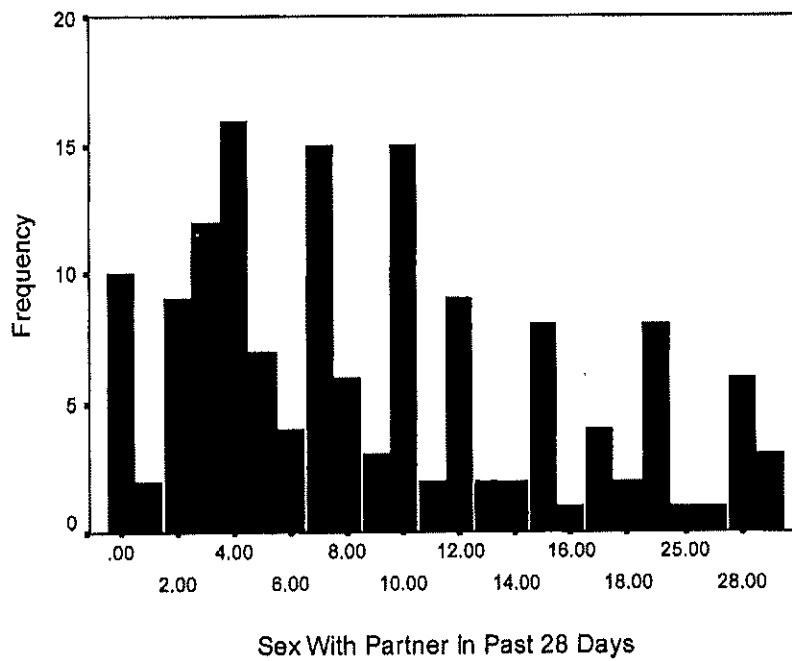
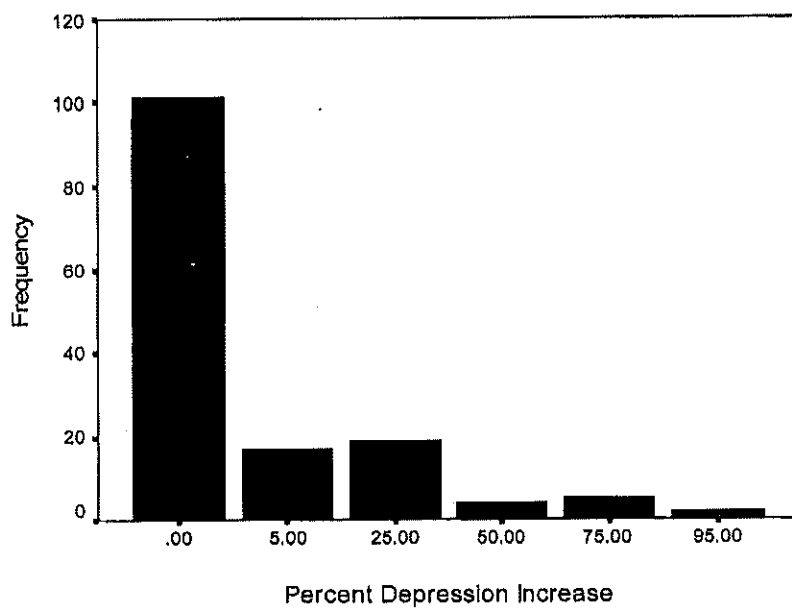


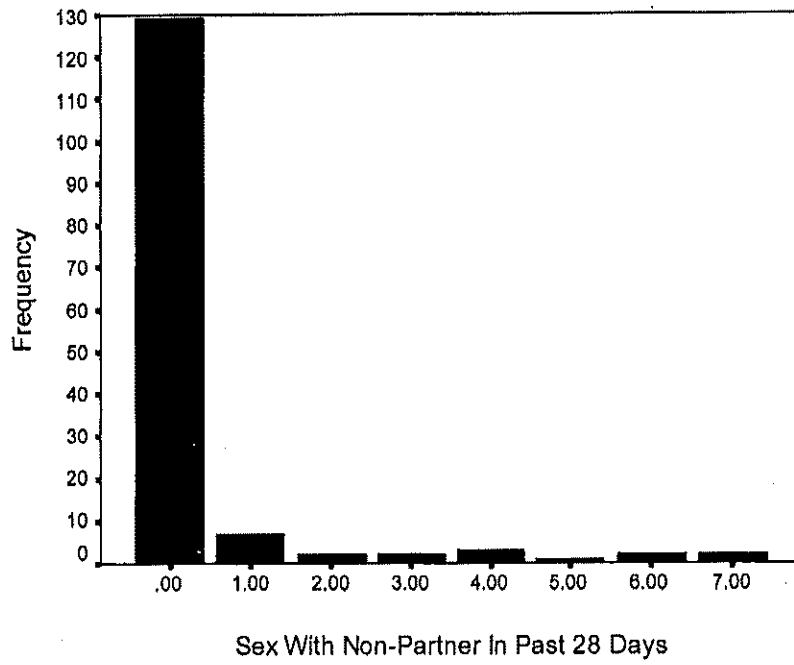












Appendix B  
Demographic Questionnaire

Please fill in or check the appropriate response for each item.

Age: \_\_\_\_\_

Sex: Female \_\_\_ Male \_\_\_

Year in college: \_\_\_\_\_

Ethnicity: \_\_\_\_\_

Are you currently in a romantic relationship in which you consider yourself in love?  
Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, how long have you been in this current relationship?

Less than 3 months \_\_\_\_\_ 3 months to 1 year \_\_\_\_\_  
1 year to 5 years \_\_\_\_\_ More than 5 years \_\_\_\_\_

*If you answered No, or less than 3 months to the questions above, this completes your participation in the study.*

Are you currently married?  
Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, how long have you been married?

Less than 3 months \_\_\_\_\_ 3 months to 1 year \_\_\_\_\_  
1 year to 5 years \_\_\_\_\_ More than 5 years \_\_\_\_\_

Are you currently living together with your romantic partner ?  
Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, how long have you been living together?

Less than 3 months \_\_\_\_\_ 3 months to 1 year \_\_\_\_\_  
1 year to 5 years \_\_\_\_\_ More than 5 years \_\_\_\_\_

Considering your current relationship, are you in love with your partner?

Yes \_\_\_\_\_ No \_\_\_\_\_

Would you consider yourself a religious/spiritual person?

Not at all \_\_\_\_\_ Somewhat \_\_\_\_\_ Very much so \_\_\_\_\_

At what age were you first exposed to pornography? \_\_\_\_\_

Who introduced you to pornography?

Parent \_\_\_\_\_ Sibling \_\_\_\_\_ Friend \_\_\_\_\_ Romantic Partner \_\_\_\_\_ Other \_\_\_\_\_

Appendix C  
Erotic Materials Use Questionnaire

This questionnaire is going to ask you some personal questions. It is very important that you answer each question honestly and as accurately as possible. Please remember that your responses will be entirely anonymous. For the purpose of this questionnaire, please rely on the following definitions:

**Sexual Activity:** physical contact in the form of intercourse, oral sex, anal sex, or shared masturbatory activity.

**Erotic Materials:** the "erotic materials" referred to in this questionnaire are intended to be broadly defined and include any images, videos, printed material, web sites, or other media that contains nudity and explicit sexual contact to arouse sexual interests.

1. How many times in the past 28 days did you engage in sexual activity with your partner (intercourse, oral sex, anal sex)? \_\_\_\_\_
2. How many times in the past 28 days did you engage in sexual activity with someone other than your partner? \_\_\_\_\_
3. In how many of the past 28 days did you view erotic materials? \_\_\_\_\_
4. During the past month, how many hours a week on average did you spend viewing erotic materials? \_\_\_\_\_

*If answer to Question # 4 is greater than 0, please answer the remaining questions:*

5. How much money did you spend on erotic materials in the last 28 days? \_\_\_\_\_
6. To what extent is your relationship partner aware that you have viewed erotic materials in the past month? (Circle the appropriate response)  
Not Aware    1    2    3    4    5    6    7    Completely Aware
7. To what extent would/does your partner object to your using erotic materials?  
Not at all    1    2    3    4    5    6    7    A Great Deal
8. To what extent do you feel in control of your erotic material viewing?

Not at all    1    2    3    4    5    6    7    Completely

9. When you view erotic materials, what *percent* of your use involves:

Videos \_\_\_\_\_%    Magazines \_\_\_\_\_%    Internet \_\_\_\_\_%

10. When you use erotic materials, what *percent* of your use involves:

Images \_\_\_\_\_%    Stories \_\_\_\_\_%    Internet Chat \_\_\_\_\_%    Video \_\_\_\_\_%    Phone \_\_\_\_\_%

11. When you view erotic materials, what *percent* of the time does your use occur:

Alone \_\_\_\_\_%    Together with Partner \_\_\_\_\_%

12. Consider the times that you viewed erotic materials within the past month.

Please estimate how often each of the following outcomes occurred within 12 hours of your erotic material usage (please use scale provided below):

(1) 0%    (2) <10%    (3) 10-40%    (4) 40-60%    (5) 60-90%    (6) >90%    (7) 100%

- \_\_\_\_\_ a. Increased fantasies about your relationship partner
- \_\_\_\_\_ b. Increased sexual desire for relationship partner
- \_\_\_\_\_ c. Sexual activity with partner
- \_\_\_\_\_ d. Decreased sexual desire for your relationship partner
- \_\_\_\_\_ e. Argument with your relationship partner
- \_\_\_\_\_ f. Increased fantasies about other people
- \_\_\_\_\_ g. Desire to be with someone other than your partner
- \_\_\_\_\_ h. Sexual activity with someone other than partner
- \_\_\_\_\_ i. Masturbation
- \_\_\_\_\_ j. Feelings of guilt
- \_\_\_\_\_ k. Feelings of anxiety
- \_\_\_\_\_ l. Feelings of depression

13. How you think your sex drive compares to other people your age?

\_\_\_ Much Lower    \_\_\_ Lower    \_\_\_ Average    \_\_\_ Higher    \_\_\_ Much Higher

14. How often do you have trouble performing sexually?

\_\_\_ 0%    \_\_\_ <10%    \_\_\_ 10-40%    \_\_\_ 40-60%    \_\_\_ 60-90%    \_\_\_ >90%    \_\_\_ 100%

15. Do any of the following describe erotic material content that is particularly appealing to you (please check if so)?

- |                 |                 |                     |            |
|-----------------|-----------------|---------------------|------------|
| ___ Humiliation | ___ Dominance   | ___ Public Exposure | ___ Incest |
| ___ Violent Sex | ___ Transgender | ___ Cross Dressing  | ___ Rape   |
| ___ Children    | ___ Voyeurism   |                     |            |

Appendix D  
Relationship Assessment Scale

For the following questions, please think about your **current romantic relationship** partner (including spouses).

Please **circle a number** to indicate what is most correct for you.

1. How well does your partner meet your needs?

Does not meet needs at all 1 2 3 4 5 Meets all my needs

2. In general, how satisfied are you with your relationship?

Not at all satisfied 1 2 3 4 5 Extremely satisfied

3. How good is your relationship compared to most?

Worse than most 1 2 3 4 5 Much better than most

4. How often do you wish you hadn't gotten into this relationship?

Never 1 2 3 4 5 All the time

5. To what extent has your relationship met your original expectations?

Not at all 1 2 3 4 5 Completely

6. How much do you love your partner?

Not very much 1 2 3 4 5 As much as I can possibly love anyone

7. How many problems are there in your relationship?

None at all 1 2 3 4 5 Very many



Appendix E  
Inventory of Personal Happiness

For the following items please think about your **current romantic relationship partner** (including spouses).

Please **circle a number** to indicate what is most correct for you.

1. How satisfied are you with your partner's physical appearance?

Not satisfied at all    1 2 3 4 5 6 7 8 9 10    Extremely satisfied

2. How satisfied are you with your own physical appearance?

Not satisfied at all    1 2 3 4 5 6 7 8 9 10    Extremely satisfied

3. How satisfied are you with your partner's affectionate behavior towards you?

Not satisfied at all    1 2 3 4 5 6 7 8 9 10    Extremely satisfied

4. How satisfied are you with your partner's sexual behavior?

Not satisfied at all    1 2 3 4 5 6 7 8 9 10    Extremely satisfied

5. How satisfied are you with the frequency of sexual activity with your partner?

Not satisfied at all    1 2 3 4 5 6 7 8 9 10    Extremely satisfied

Appendix F  
Relationship Indicators

For the following questions, please think about your **current romantic relationship partner** (including spouses).

Please **circle a number** to indicate what is most correct for you.

1. I spend as much time with my partner as possible.

Not at all 1 2 3 4 5 6 7 Very much

2. I do as many activities with my partner as possible.

Not at all 1 2 3 4 5 6 7 Very much

3. My partner and I have built an identity as a couple.

Not at all 1 2 3 4 5 6 7 Very much

4. I get so close to my partner, I'm not sure where he/she begins and I end.

Not at all 1 2 3 4 5 6 7 Very much

5. My partner is a very important part of how I see myself.

Not at all 1 2 3 4 5 6 7 Very much

6. I think in terms of "we" or "us" instead of "I" or "me".

Not at all 1 2 3 4 5 6 7 Very much

7. I can never get too close to my partner.

Not at all 1 2 3 4 5 6 7 Very much

8. I have major interests of my own outside of the relationship.

Not at all 1 2 3 4 5 6 7 Very much

9. I have a supportive group of friends, separate from my partner.

Not at all 1 2 3 4 5 6 7 Very much

10. I have a close friend other than my partner.

Not at all 1 2 3 4 5 6 7 Very much

11. My sense of being an individual is separate from my sense of being part of a couple.

Not at all 1 2 3 4 5 6 7 Very much

12. I make most decisions on my own, without checking with my partner.

Not at all 1 2 3 4 5 6 7 Very much

13. I maintain the position that, if I had to, I could really make it on my own.

Not at all 1 2 3 4 5 6 7 Very much

14. My partner and I have equal power in the relationship.

Not at all 1 2 3 4 5 6 7 Very much

15. My partner shows as much affection to me as I think I show to him/her.

Not at all 1 2 3 4 5 6 7 Very much

16. My partner and I invest equal amounts of time and energy into the relationship.

Not at all 1 2 3 4 5 6 7 Very much

17. My partner and I are equally committed to working out problems that occur in our relationship.

Not at all 1 2 3 4 5 6 7 Very much

18. All things considered, my partner and I contribute an equal amount to the relationship.

Not at all 1 2 3 4 5 6 7 Very much

19. My partner and I deal with each other as equals.

Not at all 1 2 3 4 5 6 7 Very much

20. My partner treats me and respects me as an equal.

Not at all 1 2 3 4 5 6 7 Very much

21. My partner depends on me as much as I depend on him/her.

Not at all 1 2 3 4 5 6 7 Very much

22. My partner and I demonstrate our affection.

Not at all 1 2 3 4 5 6 7 Very much

23. My partner and I show our love for each other.

Not at all 1 2 3 4 5 6 7 Very much

24. When my partner and I have an argument or disagreement we deal with it by:

- Focusing on the problem at hand

Not at all 1 2 3 4 5 6 7 Very much

- Sitting down and discussing differences constructively

Not at all 1 2 3 4 5 6 7 Very much

- Finding alternatives that are acceptable to each of use

Not at all 1 2 3 4 5 6 7 Very much

- Negotiating and compromising

Not at all 1 2 3 4 5 6 7 Very much

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