MASTURBATION AND RELATIONSHIP SATISFACTION

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Relationship satisfaction often declines after marriage or cohabitation and between 40-50% of marriages end in divorce. Furthermore, many couples who stay together report feeling unsatisfied in their relationships. Thus, it is important to examine factors that contribute to enduring and satisfying relationships. One factor that has been closely linked to relationship satisfaction is the sexual relationship of the couple. One aspect of the sexual relationship that has received little attention is masturbation. Although most psychologists hold positive views about masturbation, and recommend masturbation in many instances, the empirical data examining the association between masturbation and relationship satisfaction has mixed findings, with the majority of studies reporting a small negative relationship between these variables. The purpose of the present study was to further explore the association between masturbation and relationship satisfaction, focusing on possible moderators and mediators of this relationship including: masturbation guilt, openness with an individual's partner about masturbation, gender, object of arousal during masturbation, and reason for masturbating. Overall, masturbation frequency did not have a significant association with relationship satisfaction. However, the object of arousal during masturbation and openness about masturbation moderated the association between masturbation frequency and relationship satisfaction. Specifically, individuals who (a) used objects of arousal other than the partner when masturbating and (b) were less open about the masturbation reported a more negative association between masturbation frequency and relationship satisfaction.

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CHAPTER 1

INTRODUCTION

Relationship satisfaction is an important topic to study. In the United States, the divorce rate has more than quadrupled during the past century to nearly 50% (Hurley, 2005). Many of the couples that do stay together are not satisfied in their relationships. For example, Yucel and Gassanov (2010) found 23% of women and 18% of men reported being unsatisfied in their current relationship. Understanding the components of relationships that lead to satisfaction and distress can help better understand what leads to a successful or failed relationship. One aspect of relationship functioning that has been found to be associated with relationship satisfaction is the sexual relationship of the couple (Brody & Costa, 2009). Although research has explored various aspects of the sexual relationship of the couple such as sexual communication (Cupach & Comstock, 1990), orgasm frequency (Perlman & Abramson, 1982), and pleasure during sex (Perlman & Abramson, 1982), little research has explored the role of masturbation in romantic relationships, and how masturbation might affect relationship satisfaction.

Merriam-Webster (n. d.) defines masturbation as "erotic stimulation especially of one's own genital organs commonly resulting in orgasm and achieved by manual or other bodily contact exclusive of sexual intercourse, by instrumental manipulation, occasionally by sexual fantasies, or by various combinations of these agencies." For the purposes of this thesis, I define masturbation exclusively as the stimulation of one's own genitals. At various points throughout history, masturbation has been viewed as demonic, sacrilegious, and medically unsafe (Laqueur, 2003). However, today, masturbation has become more acceptable with 64.3% of women and 82.7% of men ages 20-24 reporting masturbating within the past year (Herbenick, Reece, Schick, Sanders, Dodge, & Fortenberry, 2010). Masturbation is even recommended by various

psychological and healthcare providers for the benefits of (a) reducing the risk of spreading HIV (Shelton, 2010) and other sexually transmitted infections (Davidson & Moore, 1994); (b) decreasing the potential need or likelihood of an individual to seek multiple or extra-relational partners (Shelton, 2010); (c) treating deviant sexual behaviors and sources of arousal (Proulx, 1993); (d) treating orgasmic disorder in women (LoPiccolo & Lobitz, 1972 & Lobitz & LoPiccolo, 1972) and occasionally in men (Hyde & DeLamater, 2011); (e) treating premature ejaculation in men (Zamboni & Crawford 2002) via the start-stop technique (Semans, J.H., 1956) or the squeeze technique (Masters & Johnson, 1970); (f) as a sexual expression for the intellectually disabled (Gill, 2012); and (g) as a means of improved sexual health (Coleman, 2002), particularly for women in mediating the exploration and knowledge of her own body (McCormick, 1994). Despite these purported benefits, masturbation is not strongly linked to sexual satisfaction (Brody & Costa, 2009). There is still a need for research examining the relationship between masturbation and relationship satisfaction.

The purpose of this thesis is to explore the relationship between masturbation and relationship satisfaction. Specifically, in Chapter 2, I review the empirical literature on the relationship between masturbation and relationship satisfaction. In Chapters 3, 4, 5, and 6, I present my thesis study that explores the association between masturbation and relationship satisfaction, including several moderators of interest. Specifically, in Chapter 3, I provide a statement of the problem that reviews the rationale for my particular study. In Chapter 4, I detail the methodology for my empirical study, including my hypotheses and planned analyses. In Chapter 5, I report the steps taken to clean the collected data as well as the analyses conducted and results found for each hypothesis. Finally, in Chapter 6, I discuss the overall findings, limitations of the project, implications for clinical application, and areas for future research.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

In the field of psychology, masturbation is associated with several benefits, including (a) reducing the risk of spreading HIV (Shelton, 2010) and other sexually transmitted infections (Davidson & Moore, 1994); (b) decreasing the potential need or likelihood of an individual to seek multiple or extra-relational partners (Shelton, 2010); (c) treating deviant sexual behaviors and sources of arousal (Proulx, 1993); (d) treating orgasmic disorder in women (LoPiccolo & Lobitz, 1972 & Lobitz & LoPiccolo, 1972) and occasionally in men (Hyde & DeLamater, 2011); (e) treating premature ejaculation in men (Zamboni & Crawford 2002) via the start-stop technique (Semans, J.H., 1956) or the squeeze technique (Masters & Johnson, 1970); (f) as a sexual expression for the intellectually disabled (Gill, 2012); and (g) as a means of improved sexual health (Coleman, 2002), particularly for women in mediating the exploration and knowledge of her own body (McCormick, 1994). Because of these benefits associated with masturbation, mental health professionals often recommend masturbation for individuals and couples struggling with sexual problems (Coleman, 2002).

First, since masturbation is a solitary activity, there is virtually no risk of either contracting a sexually transmitted infection (STI) from another person or spreading an STI to another person. For this reason, masturbation is sometimes recommended as an effective method of reducing the spread of HIV (Shelton, 2010) and other sexually transmitted infections (Davidson & Moore, 1994). Again, because masturbation is a solitary activity, masturbation may reduce the chances of or need for infidelity (Shelton, 2010). Another benefit related to possible infidelity is masturbation's ability to sexually fulfill an individual in the absence of his

or her partner. Baumeister, Catanese, and Vohs (2001) found that men have stronger sex drives than women. This means they both engage in and desire sexual activities more often than women. In a heterosexual couple, if one partner (i.e., the male) desires more sex than the other partner, masturbation could be a way to compensate for the differences in each partners' sex drive so that both partners feel sexually satisfied.

Second, masturbation is sometimes used as a treatment option for deviant sexual behaviors and arousal. There are two main ways in which masturbation can be utilized. First, masturbation can be used via counter-conditioning, which refers to creating a new association between the sexually arousing stimulus and something aversive so the once arousing stimulus will be associated with something negative and no longer be arousing to the individual (Brownell, Hayes, & Barlow, 1977). If an individual is attracted to something that is either causing the individual distress or is illegal, the individual could be counter-conditioned to reduce and hopefully eliminate sexual arousal in response to a deviant sexual target. Second, masturbation could be used with deviant or unconventional sexual behaviors and arousal by providing an individual with the opportunity to satisfy the urge, within legal limits, in the privacy of his or her own home.

Third, masturbation can be beneficial in the treatment of several sexual disorders including orgasmic disorder and premature ejaculation. Some women (and to a lesser extent, men) struggle to achieve orgasm consistently; treatment for these individuals often includes masturbation (Hyde & DeLamater, 2011). Masturbation allows individuals the opportunity to explore his or her own body and discover how his or her body needs to be stimulated in order to reach orgasm. This experience can also provide the individual with valuable information to share with future partners. In the treatment of premature ejaculation, the start-stop and squeeze

techniques are the treatments of choice (Zamboni & Crawford 2002). The start-stop technique involves masturbating the penis until the individual is close to reaching orgasm but stopping masturbation before orgasm occurs. After the individual has had time to relax, the masturbation begins again and continues until again stopping just before orgasm occurs. This process continues, gradually increasing the amount of time the penis can be stimulated before orgasm will occur. The squeeze technique involved squeezing the tip of the penis during masturbation before orgasm occurs in order to delay orgasm and enable the individual to continue masturbating until just before orgasm is again eminent, at which point the individual would again squeeze the penis to further delay orgasm. This procedure continues in order to gradually increase the time between arousal/erection and orgasm. Masturbation using the stop-start and/or squeeze techniques can be a partnered or solitary activity. Many men suffering from premature ejaculation may not have a partner with whom they could have or would want to have share in this treatment process. Masturbation allows men to work on treating premature ejaculation without the presence of a sexual partner.

Despite these benefits of masturbation, there may also be aspects of masturbation that are detrimental to a couple's relationship (Brody & Costa, 2009). For example, some forms of masturbation, especially for men, are associated with the use of pornography, which in some relationships can be viewed as a form of infidelity (Woollard, 2010). Some forms of pornography are even violent and exploitive, especially toward women (Sun & Picker, 2008). Viewing pornography has been found to be both negatively associated with relationship commitment and positively related to infidelity (Lambert, Negash, Stillman, Olmstead, & Fincham, 2012). These alternatives to partnered sexual intimacy are intricately related to relationship satisfaction through the Investment Model of commitment (Rusbult, 1983), which

conceptualizes commitment on the basis of the quality of alternatives available to an individual, relationship satisfaction, and investment in the relationship (Lambert, Negash, Stillman, Olmstead, & Fincham, 2012). There is also evidence that for both men and women, exposure to pornography is related to lower evaluations of his or her satisfaction with his or her partner's sexual appearance and behavior (Zillman, 1988). Masturbation, particularly with the use of pornography, may also create unrealistic expectations of variety and higher permissive attitudes in regards to acceptable and expected sexual behavior that a partner generally cannot be expected to meet during partnered sexual activity (Taylor, 2006).

Masturbation (with or without pornography) may also have detrimental effects on relationship satisfaction because it involves a solitary sexual experience that may involve turning away from the partner rather than toward the partner. Gottman and Gottman (2012) theorized that relationship partners reach out to one another in order to emotionally connect and meet their own needs; this is called "making a bid." When people reach out for their partner, the partner can respond by turning towards, turning away, or turning against. Turning towards entails reciprocating the reaching out and meeting the partner where he or she needs to be met; this is an emotional connection between partners. Turning away occurs when the receiving partner ignores the bid for an emotional connection. Turning against happens when the partner is actively rejected in a hurtful way (e.g., being teased for some aspect of the bid for a connection). The most successful relationships have significantly more incidents of turning towards than the unsuccessful relationships (Gottman & Gottman 2012). Although Gottman and Gottman conceptualized this theory in regard to general interpersonal emotional connection seeking behaviors (rather than sexuality specifically), sexual intimacy could be conceptualized in a similar way, with partnered intimacy being an opportunity for connection and solitary

masturbation being a missed opportunity for connection. In this way, masturbation might lead to feelings of isolation or distance from a partner, whereas coitus or other partnered sexual activity may lead to increased feelings of closeness with a partner.

Research has supported this distinction between masturbation and partnered sexual activity, specifically penile-vaginal sex, in leading to sexual satisfaction in romantic couples. Brody and Cost (2009) found that frequency of penile-vaginal sex was positively related to relationship satisfaction for both men and women. Their findings also demonstrated a negative relationship between relationship satisfaction and masturbation frequency for men and women. In regards to all other partnered sexual activity (e.g., oral, anal, touching), they found either a negative or no relationship between the frequency of that particular sexual activity and relationship activity for men and women.

Couples in which one individual is experiencing sexual dysfunction (e.g. orgasmic disorder, premature ejaculation) often experience a great deal of dissatisfaction in their relationship (Hayden, 1999). Given that relationship satisfaction (generally conceptualized as the degree to which individuals are happy with their current romantic relationship) can be very vulnerable at a time when masturbation is so frequently recommended as treatment (of particular sexual dysfunctions), it is important to examine the relationship between masturbation and relationship satisfaction. This is an important topic to investigate for non-clinical populations as well. In a time where masturbation is much more widely accepted and individuals are much more open about it than in years past (Levin, 2007), it is important to examine the association between masturbation and relationship satisfaction. This literature review seeks to examine the current literature and determine if in fact a relationship between masturbation and relationship satisfaction exists and, if so, the nature of that relationship. I have two primary hypotheses.

First, based on Gottman and Gottman's (2012) theorizing regarding the importance of connecting with your partner through shared moments and meeting one and another's need or "bids" for attention, I hypothesize that there will be an overall negative relationship between masturbation and relationship satisfaction. Second, I hypothesize that gender will moderate the relationship between relationship satisfaction and masturbation. Specifically, the relationship between masturbation and relationship satisfaction will be more negative for men than women. With the use of pornography being much more common in males than females, it is possible that some of the associated negative aspects of masturbation may be more prominent in males than females. It has also been found that males masturbate significantly more frequently than do females (Petersen & Hyde, 2010). If masturbation does have negative effects on individuals and relationships that are not currently identified, these effects could be more severe for populations masturbating more frequently.

Method

I conducted a literature search for empirical studies that examined the relationship between masturbation and relationship satisfaction in couples. Masturbation was defined as a solitary act with the goal of orgasm or sexual pleasure. The inclusion criteria for the literature search had two parts. First, included studies had a quantitative measure of both masturbation and relationship satisfaction. Studies that did not have a measure of masturbation consistent with my definition (i.e., solitary act) were excluded. Second, included studies were written in English or had an English translation available.

I conducted the literature search on June 9, 2012, using four steps. First, I searched the PsycINFO and PubMed databases using the key words "masturbation" and "relationship satisfaction/adjustment," "marital satisfaction/adjustment," and "couple satisfaction/adjustment."

This search yielded 54 total articles, 18 of which met inclusion criteria. Second, I searched the ProQuest Dissertations and Theses database using the same key words. This search yielded four additional studies, one of which met inclusion criteria. Third, I reviewed the discussion and reference sections of each of these studies for additional studies. This search yielded no additional studies that met inclusion criteria. Fourth, I contacted the primary author of each included study to ask about file-drawer studies or studies I may have missed. This search yielded no additional studies that met inclusion criteria.

Overall, I found a total of 19 studies that met inclusion criteria. Of those 19 studies, six either reported the relationship between masturbation and relationship satisfaction or an analysis was obtained by contacting the primary author. The included studies are summarized in Table 1.

Results

The review of the literature on the relationship between masturbation and relationship satisfaction is organized into two sections. First, I review the methodologies of the included studies. Specifically, I summarize the participants, measures, and research designs used to study masturbation and relationship satisfaction. Second, I review the empirical findings on the relationship between these variables.

Methods Used to Study Masturbation Frequency and Relationship Satisfaction

The six included studies had 7386 participants. In the four studies that reported gender, 69.2% were female and 30.2% were male. In the three studies that reported sexual orientation, 93.8% were heterosexual. In the three studies that reported relationship status, 61.7% were married and 38.3% were in committed non-married relationships. Participants ranged in age from 17 to 74 years old. In the three studies where the mean age was provided, the mean age was 19.7 years old. Across all six studies, three studies utilized a college student sample and

three studies utilized a sample of nonclinical adults. Participants reported a variety of nationalities including the United States, Sweden, and Finland and were from both university settings and the general population.

All participants completed written self-report surveys of both masturbation and relationship satisfaction. The most common measurement of masturbation was obtained by asking participants to report how often they had masturbated in either a set amount of time (one week, 30 days, or 12 months) or how often they masturbated in general. Participants then either responded with a numeric approximate frequency or by responding using a scale (from 0 = *never* to 10 = *more than once a day* or from 0 = *not at all* to 9 = ≥ *4 times a day*). One study divided participants into "masturbators: or "non-masturbators" based on whether or not participants reported ever having masturbated to orgasm (even just one time), with those who had achieved orgasm through masturbation labeled the "masturbators" and those who had never achieved orgasm through masturbation the "non-masturbators." Relationship satisfaction was measured using a variety of self-report measures, including the Perceived Relationship Quality Components Inventory (Fletcher, Simpson, & Thomas, 2000), the Relationship Assessment Scale (Hendrick, 1988), the Index of Marital Satisfaction (Torkan & Molavi, 2009), the Locke-Wallace Marital Adjustment Scale (Locke & Wallace, 1959), the Global Measure of Relationship Satisfaction (Lawrance & Byers,1998), or by simply adapting items from the Life Satisfaction Scale (versions LiSat-11 and LiSat8) tailored to indicate how satisfying one's current relationship is from 0 = *very unsatisfying* to 6 = *very satisfying* (Fugl-Meyer, Melin, & Fugl-Meyer, 2002).

Five of the six studies measured masturbation and relationship satisfaction at a single point in time and simply asked participants to recall the frequency of masturbation over a given

period of time (ranging from 30 days to one year). The other study collected longitudinal data from participants on their sexual behavior over a period of four weeks. Five of the included studies were correlational in design and the longitudinal sixth study was quasi-experimental, labeling individuals as either masturbators or non-masturbators based on their reported frequency of achieving orgasm through masturbation in an average week.

Empirical Findings on the Relationship between Masturbation and Relationship Satisfaction

I organize the empirical findings on the relationship between masturbation and relationship satisfaction into two sections. First, I report the overall relationship between masturbation and relationship satisfaction. Second, I summarize the empirical data on the extent to which gender moderated the relationship between masturbation and relationship satisfaction.

Overall relationship between masturbation and relationship satisfaction. My hypothesis was that there would be an overall negative relationship between masturbation and relationship satisfaction. This hypothesis was partially supported. Of the six studies included in the literature review, three studies found a statistically significant negative relationship between masturbation and relationship satisfaction, indicating that higher levels of masturbation were associated with lower levels of relationship satisfaction. The Pearson's product moment correlations in these studies ranged from -.12 to -.27, which represents small to medium effect sizes (Cohen, 1988). For example, Zamboni and Crawford (2002) studied 543 undergraduate participants (63.7% female, *M* age = 18.6). They asked participants to complete a series of questionnaires including a measure of masturbatory frequency from 0 = *never* to 10 = *more than once a day* and the Relationship Assessment Scale. After running a correlational analysis on the 59% of respondents who reported being in a relationship at the time of the study, the found a

significantly negative relationship between masturbation and relationship satisfaction ($r = .12$, $p < .05$) while controlling for social desirability.

Two studies, one using an all-female sample and the other a mixed gender sample, found no significant relationship between masturbation and relationship satisfaction ($r = -.09$ and $r = -.04$ respectively). The sixth study found higher levels of relationship satisfaction in those participants defined as masturbators (i.e., those who had masturbated to orgasm) than those defined as non-masturbators (i.e., those who had not achieved orgasm through masturbation) based on a four-week sexual behavior journal ($p = .018$). This final study is difficult to interpret because it conflates masturbation frequency with the extent to which a participant was able to achieve orgasm via masturbation. This study also reported that 24.4% of the participants in the "masturbators" group reported not currently masturbating, and 85.3% of those who endorsed currently masturbating reported enjoying masturbation. This design introduces problems of validity in their grouping of masturbators and non-masturbators.

The present review includes only a small number of studies, but the majority of empirical studies that have examined the relationship between masturbation and relationship satisfaction have reported a negative association, although in most cases the effect sizes have been small. There is also evidence for some variability in effect sizes across studies.

Moderator effect of gender. I hypothesized that gender would moderate the relationship between masturbation and relationship satisfaction, with males having a stronger negative relationship between masturbation and relationship satisfaction than females. This hypothesis was partially supported. First, in support of my hypothesis, two studies examined all-female samples. Hurlbert and Whittaker (1991) reported a positive relationship between masturbation and relationship satisfaction, whereas Meadow (1982) reported no significant relationship.

Second, Brody and Costa (2009) reported separate correlations for males and females in their sample and found that males reported a stronger negative relationship (r = -.27) than did females (r = -.12). There was also some evidence that did not support my hypothesis for a moderating effect of gender. Santilla and colleagues (2008) also reported separate effect sizes for males and females, but found that the relationship between masturbation and relationship satisfaction was almost identical in males (β = -.05) and females (β = -.06). Thus, there is some evidence that gender moderates the relationship between masturbation and relationship satisfaction, but the relationship is far from conclusive.

Discussion

The present review explored the relationship between masturbation and relationship satisfaction. There were few empirical studies that examined this relationship. Overall, most of the empirical studies found a negative relationship between masturbation and relationship satisfaction, at least for males. However, it should be noted that the effect sizes in the majority of these studies were small, ranging from (r = -.12 to r = -.27). These findings support prior theory that masturbation could be viewed as a behavior that causes people to turn away from their partners rather than turn towards them; behaviors that cause a person to turn away from rather than toward a romantic partner could be detrimental to romantic relationships (Gottman & Gottman, 2012). There was also modest evidence that the relationship between masturbation and relationship satisfaction was different for men and women. Namely, although the results from the present studies were mostly consistent for males, the results for women about the relationship between masturbation and relationship satisfaction were mixed, with some studies reporting a negative relationship, and others reporting no relationship or a positive relationship. These findings support the theory that masturbation may have negative side effects for relationship

functioning that are not currently examined in the literature, which focuses on the positive aspects of masturbation. This difference between males and females could be partially due to the higher use of pornography during masturbation by males than females. Further research is needed to identify the nature of the relationship between masturbation and relationship satisfaction, specifically other moderator variables that might explain the variability in the relationship between masturbation and relationship satisfaction.

There were several limitations to the present review. One major limitation of this literature review is that there were a small number of empirical studies that met inclusion criteria. It may be that the relationship between masturbation and relationship satisfaction is an area that has not yet attracted much attention from researchers. This could be a result of the societal taboo on masturbation and consequential avoidance of the topic by the public and researchers alike (Tiefer, 1998). A second limitation of this review relates to the samples. Only four of the six studies included male participants, so there is not as much research available on this relationship for men as women. Only two studies actually ran analyses separately based on gender. Too few studies examined this relationship separately in both men and women, so conclusions about the moderating effect of gender must be made cautiously.

A third limitation of this literature review concerns the research design of the extant studies. Five of the six studies included in the present review used a cross-sectional correlational design and the final study used a longitudinal quasi-experimental design. Thus, although several studies reported the relationship between masturbation and relationship satisfaction, with the current set of studies it is impossible to make causal conclusions about this relationship. Changes in masturbation could cause changes in relationship satisfaction, changes in relationship satisfaction could cause changes in masturbation, or there could be a bi-directional relationship

between these variables. Related to this point, the topic of study is one that may be difficult to study with more rigorous research designs, such as an experiment. Individuals differ in their views toward the acceptability of masturbation, so it may be difficult, for example, to randomly assign couples to engage in solitary masturbation to assess its causal effects on relationship satisfaction. A final limitation of the present review is that all studies used self-report measures of both masturbation and relationship satisfaction. There are several limitations inherent in self-report measures, including social desirable responding and response biases. These difficulties may be even more of a problem in the present review due to the private nature of the data being collected (e.g., reporting on one's sexual experiences).

There are several exciting areas for future research. First, due to the small number of extant studies and the mixed findings in the current set of studies, the field would be helped simply by more well-designed studies examining the overall relationship between masturbation and relationship satisfaction. There was some evidence for a moderating role of gender, and it will be important for future studies to report correlations for males and females separately. Second, it will be important to determine variables that could mediate the relationship between masturbation and relationship satisfaction. Potential mediating variables include: change in level of attraction to partner, reduction in amount of intimacy with partner, and guilt following masturbation, which could distance an individual from his or her partner.

Third, future research could explore possible variables that could moderate the relationship between masturbation and relationship satisfaction. As discussed in the present review, gender is one possible moderating variable. Other variables of interest include: the reason an individual is masturbating, the stimulus during masturbation, and how open individuals is with their partner regarding their masturbatory habits. Fourth, future research could explore

the causal direction of the relationship between masturbation and relationship satisfaction. As noted previously, it may be difficult to conduct experimental research in this area due to the sensitive nature of the topic and possible unwillingness of participants to be randomly assigned to participate in specific types of sexual behavior. One possibility to further explore the direction of this relationship is to assess masturbation and relationship satisfaction over time. Longitudinal data exploring changes in masturbation (and relationship satisfaction) over time could provide evidence for the causal direction of this relationship.

The degree to which masturbation is helping or hurting relationship satisfaction is valuable information for clinicians working with couples or individuals who present with relational distress. If an individual or a couple is presenting in therapy with relationship problems, exploring these potentially moderating and mediating variables in addition to their masturbatory habits could provide more insight into the client's relationship. It could be important to explore a client's masturbatory habits and determine the reasons for masturbating and the possible relational implications (i.e., is it helping or hurting the relationship?). It could also be important to identify possible gender differences between partners (if applicable). Psycho-education may be beneficial in helping each partner to understand those differences and how they may be affecting their relationship.

These findings could also play a significant role during counseling for certain sexual dysfunctions, particularly those in which masturbation is often recommended for treatment. Masturbation as a treatment modality may still be advisable but having a greater awareness of the wider relationship picture and possible effects of increased masturbation could lead to implementation and preventative discussions of associated problems that could arise. For example, researching further and subsequently making the couple aware of the facets of

masturbation that might help or hurt the relationship could help the couple to implement positive relationship habits to offset the possible undesired side-effects of masturbation.

Given the relatively few studies that have examined this relationship empirically, conclusions about the relationship between masturbation and relationship satisfaction should be made tentatively. At this point, there is some evidence of a negative relationship between masturbation and relationship satisfaction. Future research should examine aspects of masturbation that might be helpful or hurtful to relationship functioning. This information would give clinicians more precise information in regard to recommending masturbation as a clinical intervention, or advising couples who are struggling with issues related to their masturbatory practices or sexuality in general.

CHAPTER 3

STATEMENT OF THE PROBLEM

In the United States, nearly 50% of all marriages end in divorce (Hurley, 2005). The divorce rate is higher for younger individuals, as well as those getting married for a second or third time (Clarke & Wilson, 1994). Even for couples who stay together, they are not necessary satisfied in their marriages. According to Yucel and Gassanov (2010), 18-23% of individuals in relationships report being dissatisfied with their current relationships. An important Step in understanding what makes relationships successful or unsuccessful and satisfying or unsatisfying is to identify predictors and potential causes of satisfying and unsatisfying relationships. Some well evidenced predictors of increased relationship satisfaction are (a) greater personal commitment (Ho, Chen, Bond, Hui, Chan, & Friedman, 2012), (b) lower levels of attachment anxiety and avoidance, (Ho et al., 2012), and (c) higher levels of life satisfaction (Stanley, Ragan, Rhoades, & Markman, 2012) and sexual satisfaction (e.g., Brody & Costa 2009; Perlman & Abramson, 1982). Sexual satisfaction is positively related to sexual communication satisfaction (Cupach & Comstock, 1990), orgasm frequency (Perlman & Abramson, 1982), and pleasure during sex (Perlman & Abramson, 1982). One aspect of the sexual satisfaction that does not receive much attention is masturbation. Masturbation is the erotic stimulation of one's own genitals, which generally, but not always, results in orgasm.

It is possible that there may be a positive relationship between masturbation and relationship satisfaction. Some reasons for this potential relationship include: (a) reducing the risk of spreading HIV (Shelton, 2010) and other sexually transmitted infections (Davidson & Moore, 1994); (b) decreasing the potential need or likelihood of an individual to seek multiple or extra-relational partners (Shelton, 2010); (c) treating deviant sexual behaviors and sources of

arousal (Proulx, 1993); (d) treating orgasmic disorder in women (LoPiccolo & Lobitz, 1972 & Lobitz & LoPiccolo, 1972) and occasionally in men (Hyde & DeLamater, 2011); (e) treating premature ejaculation in men (Zamboni & Crawford 2002) via the start-stop technique (Semans, J.H., 1956) or the squeeze technique (Masters & Johnson, 1970); (f) as a sexual expression for the intellectually disabled (Gill, 2012); and (g) as a means of improved sexual health (Coleman, 2002), particularly for women in mediating the exploration and knowledge of her own body (McCormick, 1994).

Masturbation could also be negatively associated with relationship satisfaction for a variety of reasons, including a) using sexually explicit material with masturbation, which when viewed by men has been found to be negatively correlated with relationship satisfaction for both men and women (Bridges & Morokoff, 2011); b) masturbation being a means of individuals distancing themselves from their partners rather than connecting with their partners; c) individuals experiencing oxytocin releases and increased bonding during orgasm (Esch & Stefano, 2005) when they are not with their partner; d) altering people's sexual schemas in ways that limit or change their partners involvement or their involvement with their partner (Taylor, 2006); e) if people are masturbating for reasons that are hurtful to their relationships; and f) masturbation leading to secrecy or guilt associated with lower relationship satisfaction (Guerrero, La Valley, & Farinelli, 2008).

The object of stimulation during arousal could have a negative impact on relationship satisfaction. Bridges and Morokoff (2011) found that significantly more males than females reporting viewing sexually explicit material and that for 63.9% of those males, they viewed sexually explicit material for purposes of sexual stimulation independently from a partner (i.e., masturbation). The frequency that men viewed sexually explicit material was negatively

correlated with men's relationship satisfaction ($p < .05$) as well as with his female partner's relationship satisfaction ($p < .001$). Since men were primarily using sexually explicit material for solitary sexual activities, there is an implied negative correlation between the frequency a man masturbates and both his and his partner's relationship satisfaction.

Gottman and Gottman (2012) found that partners seek emotional connection with one another on a regular basis. When such a bid is made, partners can either respond by turning away, turning against or turning towards their partner. Turning away involves ignoring the bid for an emotional connection (e.g., pretending you did not hear the partner); while turning against entails actively rejecting the bid in a hurtful way (e.g., making fun of the bid). When partners turn towards their partner's bids, they meet their partner and share in that emotional connection the initiating partner was seeking. In a study of newlyweds, couples who had higher marital satisfaction and stayed married had significantly more incidents of turning towards than those couples who did not have the same marital satisfaction and longevity. In this same way, masturbation could be seen as a missed opportunity to connect with one's partner (when the partner is an option).

During sexual arousal and orgasm, oxytocin is released, along with the associated positive feelings of well-being and inclination to bond and attach (Esch & Stefano, 2005). If these positive feelings and increased bonding are associated with persons other than an individual's partner, the individual is in essence building sexual "relationships" outside of his or her primary romantic relationship. These "relationships" could detract from individuals' relationship satisfaction with their primary romantic relationship.

Repeatedly viewing pornography or fantasizing about someone other than an individual's partner can also change the individual's schemas for sex (Taylor, 2006). Modifying one's sexual

schema to include others beyond one's partner, or perhaps excluding or reducing the role of one's partner in the individual's sex schema, could interfere with the sexual intimacy in the relationship. Finally, viewing sexually explicit stimuli could alter an individual's expectations of sexual intimacy with his or her partner and could subsequently interfere with the individual's relationship (Taylor, 2006).

Individuals may be masturbating for a variety of reasons. If the reason is something directly negatively related to their partner (e.g., fighting, lack of attraction, and lack of willingness on either party's side) there could be a differing relationship between masturbation and relationship satisfaction than if the individual is masturbating for relationship neutral reason (e.g., partner unavailable, travel). When masturbation is due to a negative relationship attitude (e.g. not being attracted to a partner), it could theoretically distance an individual from his or her partner leading to potentially negative outcomes for individuals' relationship satisfaction.

Beyond the concrete reasons for masturbating and objects of arousal during masturbation, there are affective experiences related to masturbation that may influence relationship satisfaction. For example, the experience of guilt that may occur for people who do not discuss their masturbation habits with their partners may be negatively correlated with relationship satisfaction (Guerrero, La Valley, & Farinelli, 2008). This not only provides evidence for the experience of guilt as possibly related to masturbation and relationship satisfaction but also the importance of being open with one's partner. If individuals are open with their partner about their masturbatory habits, there may be a lower or nonexistent amount of guilt associated with masturbation.

The current empirical research on the relationship between masturbation and relationship satisfaction provides mixed findings. Most studies found a negative relationship between

masturbation and relationship satisfaction, although effect sizes were small (Santilla, et. al., 2008, Brody & Costa, 2009, and Zamboni & Crawford, 2002). Furthermore, there was some evidence that gender moderated the relationship between masturbation and relationship satisfaction, with men reporting a stronger negative association than women. Also, the way masturbation was measured was important. For example, one study that divided women into two groups (masturbators and non-masturbators) based on whether or not they had ever achieved orgasm via masturbation found higher levels of relationship satisfaction in the masturbators than in the non-masturbators (Hurlbert & Whittaker, 1991). With the current body of research being small and inconclusive, further research is necessary to elucidate the relationship between masturbation and relationship satisfaction. This research is important so that if masturbation does have detrimental associations with relationship satisfaction, preventative measures can be taken in order to build defenses against possible relational side effects of masturbation when it does occur (for clinical or practical reasons). The next Step towards further understanding the nature of this relationship is to identify variables that may be mediate or moderate the relationship between masturbation and relationship satisfaction to shed more light on when masturbation may be helpful or hurtful to an individual's relationship.

The present study was designed to identify possible mediators and moderators of masturbation and relationship satisfaction. In particular, this study examined (a) reasons for masturbating, (b) medium of arousal during masturbation, (c) gender and (d) level of openness with an individual's partner regarding his or her masturbatory activities as possible moderators of masturbation and relationship satisfaction. Additionally, the study examined emotions after masturbating (i.e. guilt) as a possible mediator of masturbation and relationship satisfaction. The associated practical and clinical implications will be discussed.

CHAPTER 4

METHOD

Participants

The original sample consisted of 334 participants. Of these participants, eight were removed from the sample for completing less than 10% of the items in the survey. Because all participants were required to be in a romantic relationship at the time of the study, another 16 participants were removed for identifying as single and responding "no" to the item asking "are you currently in a relationship?" One final case was removed from the sample after an initial inspection of the data suggested false responses (e.g., in response to "On average, how many times a month do you masturbate" the participant said "10,000"). Thus, the final sample included 309 participants (237 female, 66 male, 6 other) currently identifying as in a relationship. The age of participants ranged from 18 to 53 years old ($M = 21.17$, $SD = 4.96$). For further demographic information, see Table 2.

Procedure

Participants were recruited from undergraduate courses at a large urban university in the Southwestern United States. Participants completed the study online. First, participants read through an informed consent form prior to beginning the study, and indicated their consent (see appendix B). If participants agreed to participate, they were asked to respond to a series of questionnaires regarding their personal, sexual, and relationship histories (see Appendix A). The questionnaires were administered in the order in which they are listed in the following section. Participation took approximately one hour to complete the study. After completing the questionnaires, participants were debriefed and given the contact information of the researcher should they have any questions or concerns.

Measures

Demographics

A demographics questionnaire constructed for this study was used to obtain information regarding participants' age, ethnicity, religious affiliation, sex, gender, sexual orientation, and marital status.

Relationship Experience

An 11-item relationship experience questionnaire constructed for the present study was administered in order to obtain information regarding participants' current and past romantic and platonic relationships. Participants were asked to endorse whether or not they currently or have previously had a romantic relationship. Participants were also asked to indicate the length of each relationship when applicable.

Relationship Quality

Relationship quality was measured using the Perceived Relationship Quality Components (PRQC; Fletcher, Simpson, & Thomas 2000). The PRQC is an 18-item questionnaire that measures six components of relationship quality (i.e., satisfaction, commitment, intimacy, trust, passion, and love) by having participants respond to a series of items about their romantic relationship (e.g., "How dedicated are you to your relationship?"). Participants rated each item on a 7-point rating scale from 1 = *not at all* to 7 = *extremely*. The PRQC is shown to have good factor validity with the confirmatory fit index above .90 (Fletcher, Simpson, & Thomas, 2000), which is considered to be sufficiently high to evidence a good fit with previously validated measures (Bentler & Wu, 1995). The PRQC is also shown to have good internal consistency with alphas ranging from .85 to .88 (Fletcher, Simpson, & Thomas, 2000). For the present study, the average of the total scale score was used. High scores indicate higher relationship

satisfaction. For the current sample, the Cronbach's alpha coefficient was .95 (95% CI = .95 - .96).

Masturbation

A 40-item masturbation questionnaire constructed for the present study was administered to obtain information regarding (a) participants' masturbatory habits, (b) the frequency of specific objects of arousal used when masturbating, and (c) reasons for masturbating. This measure was created based upon constructs that were theorized to be related to masturbation habits in my review of the literature. Each item was evaluated by one Ph.D. level psychologist and two doctoral students in counseling psychology for clarity and face validity. Changes to item content and structure were made accordingly. For each of the 8 open-ended items, participants were either asked to give an approximate numeric frequency or to describe stimuli, fantasies, reasons for masturbating, and relational interactions with masturbation. For each of the remaining 32 items assessing reason for masturbating, object of arousal during masturbation, openness with partner about masturbation, and guilt for masturbating, participants indicated their frequency by using a rating scale from 1 = *never* to 5 = *always*.

Reason for masturbating. Reason for masturbating was assessed with 12 items on the masturbation questionnaire addressing the reasons that participants are choosing to masturbate when they do so (e.g. "How often do you masturbate because you are not attracted to your partner?"). For each of these items, participants responded from 1 = *never* to 5 = *always*. Three of these 12 items assess relationship neutral reasons for masturbating (e.g. "How often do you masturbate because you and your partner are not in the same place?"). The remaining 9 items assess masturbating for anti-relationship reasons (e.g., "How often do you masturbate because your partner is not willing to pleasure you in the way that you would like to be pleasured?").

The three items that assessed relationship neutral reasons for masturbating were not strongly correlated with the other items on the scale. Thus, for the present study, I reverse coded and averaged the nine items assessing for the occurrence of anti-relationship reasons for masturbating to create a reason for masturbating score. Higher scores indicate more pro-relationship reasons for masturbating. For the current sample, the Cronbach's alpha coefficient was .81 (95% CI = .77 - .85).

Object of arousal. Object of arousal during masturbation was assessed using five items on the masturbation questionnaire. These five items assess whether the participant is masturbating with a neutral, pro, or anti-relationship source of arousal. Masturbating with a relationship neutral source of arousal was conceptualized as masturbating with neither a visual nor imagined stimulus as indicated by participant's response to the item (e.g., "When masturbating, how often do you do so without any visual or imagined stimuli?"). Masturbating with a pro-relationship source of arousal was assessed using two items (e.g., "When masturbating, how often do you fantasize about your partner?"). Masturbating with an anti-relationship source of arousal was assessed using two items (e.g., "When masturbating, how often do you view pornography or other erotic materials (of someone other than your partner?"). For each of these five items, participants responded from 1 = *never* to 5 = *always*. The five object of arousal items were not strongly correlated with each other. Thus, for the present study, I created a masturbation target score by reverse coding and averaging the two items assessing for frequency of viewing or fantasizing about someone other than your partner during masturbation. Higher scores indicated a more pro-relationship target of masturbation. In the current sample, these two items had a Pearson's correlational coefficient of .49.

Openness with partner about masturbation. Openness with partner about masturbation was assessed using six items on the masturbation questionnaire. These items assessed the extent to which participants communicate with their partners regarding their masturbatory habits (e.g., "When masturbating, how often do you feel that you should not tell your partner you have done so?"). For each of these five items, participants responded from 1 = *never* to 5 = *always*. I created an openness score by averaging six items (three of which were reversed coded) assessing for openness with partner about masturbation. Higher scores indicate higher levels of openness with one's partner about masturbation. For the current sample, the Cronbach's alpha coefficient was .90 (95% CI = .87 - .92).

Guilt from masturbation. Guilt from masturbation was assessed using seven items from the masturbation questionnaire. These items assessed how often participants feel guilty for masturbating after they masturbate (e.g., "After masturbating, how often do you feel badly for that your masturbated?"). For each of these five items, participants responded from 1 = *never* to 5 = *always*. I created a masturbation guilt score by averaging the seven items assessing for masturbation guilt. Higher scores indicate higher levels of guilt about masturbation. For the current sample, the Cronbach's alpha coefficient was .98 (95% CI = .98 - .99).

Sexual Experience

An eighteen-item sexual experience questionnaire constructed for the present study was included in order to obtain information regarding participants' sexual experience. This questionnaire asked participants to indicate how many times per month, if ever, they engage in a series of sexual activities. Participants responded to each item on a five-point rating scale from 1 = *never* to 5 = *more than 12*. Additional items asked participants to indicate how often either

they or their partner reaches orgasm during partnered sexual activities. Participants responded to items on a 5-point rating scale from 1 = *never* to 5 = *always*.

Hypotheses and Planned Analyses

Hypothesis 1

Statement. There will be a negative relationship between masturbation frequency and romantic relationship satisfaction.

Justification. Sexual intimacy is an important part of a relationship (Birnie, 2009). If individuals are meeting their sexual needs outside of their relationships (i.e., through solitary masturbation) they are not only reducing their partner's ability to be involved in the immediate sexual closeness, but they are creating sexual intimacy separate from their partner. Masturbation could be seen as drawing an individual away from their partner in place of a sexual activity with a partner that could promote closeness instead of distance.

Planned analysis. I examine the Pearson's product moment correlation coefficient to determine the direction and strength of the relationship between masturbation frequency and romantic relationship satisfaction.

Hypothesis 2

Statement. Gender will moderate the relationship between masturbation frequency and romantic relationship satisfaction. Specifically, for men, there will be a negative relationship between romantic relationship satisfaction and masturbation frequency. However, for women, this relationship will be positive.

Justification. Although the evidence for the overall relationship between masturbation and relationship satisfaction is mixed, there is some evidence that this relationship is more negative for men than women (Brody & Costa, 2009). Looking at gender as a moderator may

explain some of the conflicting findings from past research regarding the relationship between these two constructs. Since pornography, an extra-relational stimulus, is used during masturbation more commonly for men than for women (Bridges & Morokoff, 2011), it may be that for men, masturbation brings the individual away from his relationship more strongly than for women. Additionally, for females, masturbation is recommended in order to explore their own bodies (McCormick, 1994). This experience is related to higher levels of orgasmic responsiveness during coitus (Bentler & Peeler, 1979), which could be serving as a buffer to the possible negative effects of masturbation on relationship satisfaction by improving relationship satisfaction (Hurlbert, Apt, & Rabehl, 1993).

Planned analysis. First, I center the continuous predictor variable (masturbation frequency) to reduce multicollinearity. Next, I create a product term with the centered predictor variable (masturbation frequency) and moderator variable (gender). I then conduct a hierarchical multiple regression with relationship satisfaction as the dependent variable and the centered predictor variable (masturbation frequency) and moderator variable (gender) in Step 1. In Step 2 of the hierarchical regression, I enter the newly created product term. Next, I examine the product term to determine if the interaction is significant. If the interaction is significant, I graph the interaction and conduct simple slope analyses to determine the nature of the interaction, as outlined by Aiken and West (1991).

Hypothesis 3

Statement. The reason a person is masturbating will moderate the relationship between masturbation frequency and romantic relationship satisfaction. Specifically, if participants are masturbating for reasons that pull them away from their relationship (i.e., not being interested in their partner or partner not being interested in them), there will be a negative relationship

between masturbation frequency and relationship satisfaction. However, if participants are masturbating for a reason that is relationship positive (i.e., aroused from fantasizing about partner), there will be a positive relationship between masturbation frequency and romantic relationship satisfaction.

Justification. Masturbation can occur for a variety of reasons. Possible reasons include those that pull the individual away from his or her relationship (i.e., fighting, lack of attraction, resentment), those that are relationship neutral (i.e., partner unavailable, travel), and those that benefit the relationship (i.e., aroused when thinking of partner, preparing for sexual intimacy with partner). If an individual is masturbating when his/her partner is out of town, it could have no relationship with the individual's relationship satisfaction and simply be due to the impossibility of having physical intimacy with his/her partner. However, if an individual is masturbating when the partner is available but the individual is choosing to be sexual without his/her partner, this could be associated with lesser relationship satisfaction. If the individual is avoiding physically intimacy with his or her partner, there could be underlying and associated relational problems (Renshaw, 2001).

Planned analysis. First, I center the continuous predictor (masturbation frequency) and moderator (reason for masturbating) variables to reduce multicollinearity. Next, I create a product term with the centered predictor variable (masturbation frequency) and centered moderator variable (reason for masturbating). I then conduct a hierarchical multiple regression with relationship satisfaction as the dependent variable and the centered predictor variable (masturbation frequency) and centered moderating variable (reason for masturbating) in Step 1. In Step 2 of the hierarchical regression, I enter the newly created product term. Next, I examine the product term to determine if the interaction is significant. If the interaction is significant, I

graph the interaction and conduct simple slope analyses to determine the nature of the interaction, as outlined by Aiken and West (1991).

Hypothesis 4

Statement. The object of arousal when masturbating will moderate the relationship between masturbation frequency and relationship satisfaction. Specifically, if participants are masturbating with objects of arousal that are pro-relationship (e.g., fantasizing about their partner or viewing erotic images/videos of their partner), there will be a positive relationship between masturbation frequency and relationship satisfaction. However, if participants are masturbating with objects of arousal that are anti-relationship (e.g., fantasizing about someone other than their partner or viewing pornography or other erotic materials of someone other than their partner), there will be a negative relationship between masturbation frequency and romantic relationship satisfaction.

Justification. During sexual arousal and orgasm, oxytocin is released, along with the associated positive feelings of well-being and inclination to bond and attach (Esch & Stefano, 2005). If these positive feelings and increased bonding are associated with persons other than an individual's partner, the individual is in essence building sexual "relationships" outside of his or her primary romantic relationship. Additionally, repeatedly viewing pornography or fantasizing about someone other than an individual's partner can change the individual's schemas for sex (Taylor, 2006). Modifying one's sexual schema to include others beyond one's partner, or perhaps excluding or reducing the role of one's partner in the individual's sex schema, could interfere with the sexual intimacy in the relationship. Finally, viewing sexually explicit stimuli could alter an individual's expectations of sexual intimacy with his/her partner and could subsequently interfere with the individual's relationship (Taylor, 2006).

Planned analysis. First, I center the continuous predictor (masturbation frequency) and moderator (object of arousal) variables to reduce multicollinearity. Next, I create a product term with the centered predictor variable (masturbation frequency) and centered moderator variable (object of arousal). I then conduct a hierarchical multiple regression with relationship satisfaction as the dependent variable and the centered predictor variable (masturbation frequency) and centered moderating variable (object of arousal) in Step 1. In Step 2 of the hierarchical regression, I enter the newly created product term. Next, I examine the product term to determine if the interaction is significant. If the interaction is significant, I graph the interaction and conduct simple slope analyses to determine the nature of the interaction, as outlined by Aiken and West (1991).

Hypothesis 5

Statement. Openness with one's romantic partner about masturbation will moderate the relationship between masturbation frequency and relationship satisfaction. Specifically, if there is less openness with partner about masturbating, there will be a negative relationship between masturbation frequency and relationship satisfaction. However, if there is more openness with partner about masturbation, there will be no relationship between masturbation frequency and relationship satisfaction.

Justification. While masturbation occurs separately from an individual's relationship, it does not necessarily need to be isolating. Including one's partner in one's sexuality, even those portions that the partner is not actively involved in, could reduce the potential distancing of one partner from the other and any associated relational detriment that may accompany masturbation. If an individual is open with his or her partner about his or her masturbation there is not only

increased opportunity for partner closeness but also likely a decrease in associated feelings of guilt (and likely shame), which can be further distancing in a relationship (Coleman, 2002).

Planned analysis. First, I center the continuous predictor (masturbation frequency) and moderator (openness with partner) variables to reduce multicollinearity. Next, I create a product term with the centered predictor variable (masturbation frequency) and centered moderator variable (openness with partner). I then conduct a hierarchical multiple regression with relationship satisfaction as the dependent variable and the centered predictor variable (masturbation frequency) and centered moderating variable (openness with partner) in Step 1. In Step 2 of the hierarchical regression, I enter the newly created product term. Next, I examine the product term to determine if the interaction is significant. If the interaction is significant, I graph the interaction and conduct simple slope analyses to determine the nature of the interaction, as outlined by Aiken and West (1991).

Hypothesis 6

Statement. Guilt will mediate the relationship between masturbation frequency and romantic relationship satisfaction.

Justification. Masturbation is sometimes associated with high levels of guilt (Coleman, 2002). The guilt a person feels about masturbating could be associated with several different factors (e.g., content of sexual fantasy/stimuli during masturbation, having an extra-relational sexual experience, experiencing a lack of attraction to partner, etc). Although guilt can occur for many reasons, the presence of guilt indicates to some extent that the individual experiencing the guilt is not completely congruent with this part of his or her life. Coleman (2002) found that masturbation guilt is associated with social isolation and relational conflicts. Although masturbation guilt is typically attributed to the societal taboo and stigma of masturbation

(Coleman, 2002), the underlying incongruence could result from either anti-relational motivations behind the masturbations or following masturbation, ultimately resulting in a negative relationship between masturbation and relationship satisfaction.

Planned analysis. I test for mediation using the steps outlined in Baron and Kenny (1986). First, I conduct a bivariate regression analysis with romantic relationship satisfaction as the outcome variable and masturbation frequency as the predictor variable to determine if the overall relationship between these two variables is significant. If this overall relationship is significant, I then conduct a bivariate regression analysis to determine if the predictor variable (masturbation frequency) is significantly associated with the mediator variable (guilt). If this relationship is significant, I then conduct a multiple regression analysis with romantic relationship satisfaction as the outcome variable and masturbation frequency and guilt as predictor variables. I examine the beta weight for guilt to determine if the mediator variable (guilt) is a significant predictor of the outcome variable (romantic relationship satisfaction) while controlling for the predictor variable (masturbation frequency). I then examine the beta weight for masturbation frequency. If the beta weight for masturbation frequency is no longer significant, this indicates full mediation. If the beta weight is reduced but remains significant, this indicates partial mediation. The significance of the mediated effect is tested using the Sobel test.

CHAPTER 5

RESULTS

Testing for Assumptions

Prior to running analyses, I checked for missing data, outliers, and normality. The eight participants who completed less than 10% of the items in the survey were removed. For each moderation and mediation analysis, a subsample was created excluding participants who had responded "N/A" to every item used to create a particular scale in a given analysis. Outliers were defined as values greater than three standard deviations above the mean or less than three standard deviations below the mean. There was a small amount of outliers among some variables (less than 5% per variable). High outlier values were adjusted to three standard deviations above the mean in order to retain the participant's high value but not allow the outliers to disproportionately affect the analyses. Low outlier values were adjusted to three standard deviations below the mean in order to retain the participant's low value but not allow the outliers to disproportionately affect the analyses. Normality was evaluated by checking for skewness and kurtosis of each variable. Variables with skewness greater than 1 or less than -1 were transformed using a square root transformation. The following variables were transformed: masturbation frequency, relationship satisfaction, reason for masturbating, and masturbation guilt. In each instance, the transformation reduced the amount of skew. Means and standard deviations and intercorrelations for the study variables are listed in Tables 3 and 4.

Testing Hypotheses

Hypothesis 1 was that there would be a negative relationship between masturbation frequency and romantic relationship satisfaction. I tested this hypothesis by examining the Pearson's product moment correlation coefficient between masturbation frequency and

relationship satisfaction. This hypothesis was not supported. The Pearson's product moment correlation coefficient between masturbation frequency and relationship satisfaction was not significant (r = -.08, p = .183).

Hypothesis 2 was that gender would moderate the relationship between masturbation frequency and romantic relationship satisfaction. Specifically, I hypothesized that for men, there would be a negative relationship between masturbation frequency and romantic relationship satisfaction. However, for women, I predicted this relationship would be positive. Due to the small number of respondents who indicated "other" to the item assessing gender, those six participants were not included in this analysis. This left 303 participants included in the present analysis. To test this hypothesis, I centered the continuous predictor variable (masturbation frequency per month) to reduce multicollinearity. I then created a product term using gender and the centered masturbation frequency. Next, I ran a hierarchical regression with relationship satisfaction as the dependent variable, gender and centered masturbation frequency in the first Step, and the newly created product term in the second Step. This hypothesis was not supported. In Step 1, the model was not significant, R^2 = .01, F(2, 300) = 1.18, p = .310. Neither gender, B = .01, p = .855, nor masturbation frequency, B = -.02, p = .198, was a significant predictor of relationship satisfaction. In Step 2, the interaction of masturbation frequency and gender did not predict a significant amount of variance beyond that predicted by masturbation frequency and relationship satisfaction, R^2-change = .00, F-change (1, 299) = 1.17, p = .281.

Hypothesis 3 was that the reason a person is masturbating would moderate the relationship between masturbation frequency and romantic relationship satisfaction. Specifically, I hypothesized that for participants who are masturbating for more anti-relationship reasons, there would be a negative relationship between masturbation frequency and relationship

satisfaction. However, I hypothesized that for participants who are masturbating for more pro-relationship reasons, there would be a positive relationship between masturbation frequency and romantic relationship satisfaction. The 103 participants who responded "N/A" to all items assessing the reason a person masturbates were not included in this analysis, leaving 206 participants included for the present analysis. To test this hypothesis, I centered the continuous predictor variable (masturbation frequency) and the continuous moderator variable (reason for masturbating) to reduce multicollinearity. I then created a product term using the centered predictor variable and centered moderator variable. Next, I ran a hierarchical regression with relationship satisfaction as the dependent variable, centered reason for masturbating and centered masturbation frequency in Step 1 and the product term in Step 2.

This hypothesis was not supported. In Step 1, the overall model was significant, $R^2 = .08$, $F(2, 203) = 5.99$, $p = .003$. Masturbation frequency was not a significant predictor of relationship satisfaction, $B = .01$, $p = 633$. The reason a person is masturbating was a significant predictor of relationship satisfaction, $B = .35$, $p = .001$. This indicates that masturbating for more pro-relationship reasons was associated with higher levels of relationship satisfaction. However, in Step 2, the interaction between masturbation frequency and reason for masturbating did not predict a significant amount of additional variance in relationship satisfaction, R^2-change = .00, F-change (1, 202) = 0.83, $p = .363$.

Hypothesis 4 was that the object of arousal when masturbating would moderate the relationship between masturbation frequency and relationship satisfaction. Specifically, I hypothesized that for participants who are masturbating with objects of arousal that are more pro-relationship, there would be a positive relationship between masturbation frequency and relationship satisfaction. However, for participants who are masturbating with objects of arousal

that are more anti-relationship, I predicted that there would be a negative relationship between masturbation frequency and romantic relationship satisfaction. The 113 participants who responded "N/A" to all items assessing the object of arousal during masturbation (masturbation target) were not included in this analysis, leaving 198 participants included for the present analysis. To test this hypothesis, I centered the continuous predictor variable (masturbation frequency) and the continuous moderator variable (masturbation target) to reduce multicollinearity. I then created a product term using the centered predictor and centered moderator variables. Next, I ran a hierarchical regression with relationship satisfaction as the dependent variable, the centered predictor variable and moderator variable in Step 1, and the newly created product term in Step two.

This hypothesis was partially supported. In Step 1, the overall model was not significant, $R^2 = .03$, $F(2, 195) = 2.91$, $p = .057$. Masturbation frequency did not significantly predict relationship satisfaction $B = .01$, $p = .437$; however, masturbation target was a significant predictor of relationship satisfaction, $B = .05$, $p = .018$. Participants who reported higher frequencies of masturbation with more pro-relationship targets had higher levels of relationship satisfaction. In Step 2, the interaction between masturbation frequency and masturbation target did predict a significant amount of additional variance in relationship satisfaction, R^2-change = .02, F-change (1, 194) = 4.03, $p = .046$. Since the interaction was significant, I graphed the interaction at one standard deviation above the mean masturbation target and one standard deviation below the mean masturbation target (see Figure 1). I also conducted a simple slope analysis as outlined by Aiken and West (1991). The simple slopes analysis indicated that at one standard deviation above the mean target of masturbation score, masturbation frequency was a significant positive predictor of relationship satisfaction, $B = .09$, $p = .005$. However, at one

standard deviation below the mean target of masturbation score, masturbation frequency did not significantly predict relationship satisfaction, B = -.04, p = .107. Overall, this analysis provided some support for the hypothesis indicating that for those who masturbate with a target of arousal that is pro-relationship, masturbation frequency positively predicted relationship satisfaction. However, for those who masturbate with a target of arousal that is anti-relationship, masturbation frequency was not a significant predictor of relationship satisfaction.

Hypothesis 5 was that openness with one's romantic partner about masturbation would moderate the relationship between masturbation frequency and relationship satisfaction. Specifically, I hypothesized that if there was less openness with one's partner about masturbating, there would be a negative relationship between masturbation frequency and relationship satisfaction. However, if there was more openness with one's partner about masturbation, there would be no relationship between masturbation frequency and relationship satisfaction. The 96 participants who responded with "N/A" to all items assessing openness with one's partner were not included in this analysis, leaving 213 participants included in this analysis. To test this hypothesis, I centered the continuous predictor variable (masturbation frequency) and the continuous moderator variable (openness with partner). I then created a product term with the centered predictor variable and the centered moderator variable. Finally, I ran a hierarchical regression with relationship satisfaction as the dependent variable, the centered predictor and centered moderator variables in Step 1, and the product term in Step 2.

This hypothesis was supported. In Step 1, the model was significant, R^2 = .05, F(2, 210) = 4.92, p = .008. Masturbation frequency was not a significant predictor of relationship satisfaction, B = -.02, p = .125; however, openness with one's partner about masturbation was a significant predictor of relationship satisfaction, B = .05, p = .003. Increased openness with

one's partner was associated with higher levels of relationship satisfaction. In Step 2, the interaction predicted a significant amount of variability beyond that predicted by masturbation frequency and openness with one's partner, R^2-change = .02, F-change (1,209) = 4.60, p = .033. Since the interaction was significant, I graphed the interaction at one standard deviation above the mean openness score and one standard deviation below the mean openness score (See Figure 2). I also conducted a simple slope analysis as outlined by Aiken and West (1991). This analysis indicated that at one standard deviation above the mean score for openness with one's partner, masturbation frequency did not significantly predict relationship satisfaction, B = .00, p = .948. However, at one standard deviation below the mean score for openness with one's partner, masturbation frequency was a significant negative predictor of relationship satisfaction, B = -.07, p = .009. This hypothesis was supported indicating that people who are more open with their partners about masturbatory habits, there was no relationship between masturbation frequency and relationship satisfaction; however, for people who are less open with their partners about masturbatory habits, there was a negative relationship between relationship satisfaction and masturbation frequency.

Hypothesis 6 was that guilt would mediate the relationship between masturbation frequency and romantic relationship satisfaction. To test this hypothesis, I utilized the steps outlined by Baron and Kenny (1986). In Step 1, I conducted a bivariate regression analysis with relationship satisfaction as the dependent variable and masturbation frequency as the predictor variable. Masturbation frequency was not a significant predictor of relationship satisfaction, B = -.01, p = .409. Since this analysis was not significant, I did not continue with the remaining steps necessary to determine mediation. This hypothesis was not supported.

CHAPTER 6

DISCUSSION

Overall Findings

Overall relationship. A significant overall relationship between masturbation frequency and relationship satisfaction was not supported. This is consistent with previous research, as results of past studies were mixed. Furthermore, even for the studies that did find a significant relationship between masturbation frequency and relationship satisfaction (Brody & Costa, 2009, Santtila et al. 2008, & Zamboni & Crawford, 2002), the effect sizes were small (comparable to what I found in my study). Since some studies found significant relationships and others did not, potential moderators and mediators need to be investigated in order to better understand the mixed findings of studies.

Gender. Gender was not supported as a moderator between masturbation frequency and relationship satisfaction. Previous studies on the possible moderating effect of gender on the relationship between masturbation frequency and relationship satisfaction were mixed. Some studies reported similar findings for men and women (Brody & Costa, 2009), whereas other studies found that the relationship between masturbation frequency and relationship satisfaction was more positive for women than men (Santtila, et. al 2008). It is possible that the association between masturbation frequency and relationship satisfaction is similar across gender. However, it is also possible that this finding was partially due to limitations in the current sample (e.g., low number of male participants, low number of older or married participants).

Reason for masturbating. The current study provided evidence that one's reason for masturbating is positively related to relationship satisfaction. Specifically, individuals who had higher levels of pro-relationship reasons for masturbating (as indicated by reported low

frequencies of masturbating for anti-relationship reasons) also tended to report high levels of relationship satisfaction. Likewise, individuals who reported more anti-relationship reasons for masturbating (e.g., "How often do you masturbate because your partner does not know how you like to be pleasured?") also tended to report lower levels of relationship satisfaction. This finding is consistent with the idea that avoiding sexual intimacy with a partner (anti-relationship reasons) is negatively associated with relationship satisfaction (Renshaw, 2001). These findings are also consistent with the idea of turning away or turning towards your partner (Gottman & Gottman, 2012) having a similar presence in terms of sexual closeness as it does in emotional closeness. This means that a person choosing to masturbate rather than connect with a partner may indicate a missed opportunity for sexual closeness with the partner and could have negative associations with relationship satisfaction.

Object of arousal. The findings of this study provided support that the object of arousal during masturbation moderated the relationship between masturbation frequency and relationship satisfaction. Specifically, for individuals who masturbated with a more pro-relationship target, masturbation frequency was significantly positively related to relationship satisfaction. However, for individuals who masturbated with a more anti-relationship target, masturbation frequency was not significantly negatively associated with relationship satisfaction. These findings are consistent with previous theory regarding oxytocin levels and bonding promotion following orgasm either being with a partner or with someone other than your partner (Esch & Stefano, 2005). In relation to this finding, those masturbating with pro-relationship targets may have been further bonded with their partners from masturbating which is one theory to explain the positive relationship between masturbation frequency and relationship satisfaction. These findings are also consistent with the idea that altering sexual schemas and sexual expectations

during masturbation with non-partner stimuli could reduce the role of a partner in an individual's sexual schema (Taylor, 2006). Likewise, masturbating with a pro-relationship target of masturbation could increase or maintain the partner's role in an individual's sexual schema and expectations.

Openness with partner. The current study provided support that openness with one's partner regarding masturbatory habits moderated the relationship between masturbation frequency and relationship satisfaction. Specifically, for individuals who were more open with their partners regarding masturbatory habits, there was no relationship between masturbation frequency and relationship satisfaction; however, for individuals who were less open with their partners regarding masturbatory habits, there was a negative relationship between masturbation frequency and relationship satisfaction. This finding is consistent with previously discussed theory, originating from Gottman and Gottman's (2012) ideas of turning away or turning towards, specifically relating to openness providing an opportunity for connection with one's partner. This could potentially operate as a buffer between masturbation frequency and relationship satisfaction being negatively associated if there is openness and connection with one's partner regardless of masturbation frequency. For those who are less open with their partners regarding their masturbatory habits, negative feelings regarding masturbation (e.g., guilt, shame, mistrust) may exist. These feelings and secrecy can lead to distance between partners rather than connection which could potentially explain the negative association between masturbation frequency and relationship satisfaction for those who are less open with their partners regarding masturbatory habits (Coleman, 2002).

Guilt. The current study did not support the hypothesis that guilt would mediate a relationship between masturbation frequency and relationship satisfaction. This was not

consistent with prior research identifying guilt as positively related to social isolation and relationship conflict (Coleman, 2002).

Limitations

Sample. There were some limitations of the present study in regard to the sample used. The participants in this thesis project were all college students and tended to be of a more traditional college age. It is possible that college students have different attitudes towards sexuality and sexual behaviors than older populations. Therefore, the extent to which the findings of this thesis are generalizable beyond the college population must be considered as a potential limitation. The sample also consisted of significantly more females than males. Males tend to masturbate more frequently than females (Petersen & Hyde, 2010). The ratio of females to males in the current sample was not representative of the general population. Any results of this study, particularly those related to gender, should be interpreted with caution. Finally, one inclusion criterion for participation in this study was that individuals must identify as being in a committed relationship. Consequently the participants ranged from being in open committed-relationships to being married, with several relational commitments levels in between. The range in level of commitment as well as length of current relationship may have played a confounding role in the results of the study and should be considered in interpreting the findings of this thesis.

Design. Due to the nature of the research questions (e.g., difficult to randomly assign individuals to different levels of masturbation frequency), this thesis was correlational in design. While the findings do indicate meaningful associations between variables, they cannot be interpreted as having a causal relationship. Understanding aspects of masturbation that may mediate or moderate a relationship between masturbation frequency and relationship satisfaction

is an important Step in furthering our understanding of masturbation and relationship satisfaction but neither fully explains nor implies any directionality in the relationship between the two.

Measures. This area is relatively unstudied. As a result, many of the measures used to test hypothesis were created for this thesis project. Although, many of the measures did show evidence of good internal consistency, some measures had to be modified to obtain acceptable levels of internal consistency. The newness of the measures and lack of evidence regarding reliability and validity is a limitation of the present study. In interpreting the findings of this study, it is important to consider the lack of empirical evidence for the reliability and validity of many of the measures used to test the hypotheses of this project.

Implications for Clinical Application

Therapy. The current findings do not provide evidence for masturbation frequency having an overall relationship with relationship satisfaction. Therefore, it should neither be exclusively indiscriminately recommended nor avoided. Instead, areas related to masturbatory and relational habits should be explored. For example, the current study provided evidence that masturbation target moderated the relationship between masturbation frequency and relationship satisfaction. Specifically, if an individual is masturbating with a more pro-relationship target (e.g., less frequency viewing of "pornography or other erotic materials of persons other than your partner"), there was a positive relationship between masturbation frequency and relationship satisfaction. Assessing for the target of masturbation could provide the clinician with important information regarding masturbatory habits that could be closely linked with relationship satisfaction.

Another area in which clinicians should look for information regarding their clients' masturbatory habits and possible relationship satisfaction correlations is how open they are with

their partners regarding their masturbatory habits. The present study provided evidence for a negative relationship between masturbation frequency and relationship satisfaction for individuals who were less open with their partner's about masturbation, while there was no relationship for masturbation frequency and relationship satisfaction for individuals who were more open with their partners regarding masturbation. As a clinician, it is important to address how open clients are being with their partners regarding masturbation. If clients are not open, this may be an important topic of exploration as well as possible assignment between sessions.

A final area in which clinicians should assess masturbatory habits is the reason why clients are masturbating. If clients are masturbating for reasons that may be anti-relationship (e.g., "how often do you masturbate because you are not interested in being intimate with your partner?") the present study has found lower levels of relationship satisfaction than in those who are masturbating less frequently for anti-relationship reasons.

These contextual areas of masturbatory habits are important to assess in regards to sexual activities and relationship satisfaction. However, they are also important to address when making recommendations to clients. Providing your client with psycho-education explaining how these contextual factors may be related to their levels of relationship satisfaction may be an important Step in helping the client to be more aware of their masturbatory behaviors and make appropriate adjustments (e.g., fantasizing about partner rather than neighbor during masturbation, being more open with partner regarding masturbation).

Treatment of sexual disorders. Masturbation can be a successful method of treating certain sexual disorders (e.g., Lobitz & LoPiccolo, 1972 & Zamboni & Crawford, 2002); however, in recommending this treatment, a clinician should keep possible negative associations with relationship satisfaction in mind. If an individual is keeping their masturbation hidden from

a partner, there could be associated declines in relationship satisfaction. There could also be protective factors. If an individual is masturbating with a partner as the target of masturbation, this could be associated with higher levels of relationship satisfaction. Such risk and protective factors should be considered and discussed before treatment recommendations are made.

Areas for Future Research

Sample. Similar studies should be conducted with a sample representing a wider range of participants. Specifically, research should be done with a larger number of males in the sample. The findings of this study do not necessarily mean that gender does not moderate the relationships between masturbation frequency and relationship satisfaction. It could mean that there were not enough males in the sample to find significance if such a relationship does exist. Further research should also seek to include more individuals identifying as other genders (e.g., transgender, transsexual) so that this population would be represented well enough to include those identifying as other in an analysis of possible gender moderation. Future studies should include older, non-college populations to increase generalizability of the findings. Relationship status should also be considered in future research. The current studied allowed participants to be in any type of relationships that they viewed as committed. An important Step moving forward may be to limit the kind of committed relationship participants are in. Such studies could look at only married couples, only cohabitating couples, only couples who had been monogamous for more than two years, or in some other way that future research designers find appropriate to reduce participant variability regarding relationship status. Future studies could also include people of any relationship status and explore the quality of relationships beyond romantic relationships. Given the decreased romantic relationship satisfaction associated with

certain masturbatory behaviors, it is important to identifying the extent to which other relationships may be affected by similar masturbatory behaviors.

Couples. Future research could benefit from including both members of relationships in the study. In this way, research could look at the extent to which partners agree about relationship variables (e.g., relationship satisfaction) as well as how knowledgeable a partner is regarding his or her partner's masturbatory habits, feelings, relationship satisfaction, etc. Looking at consistency of behavior report and partner impressions could help better understand the mediating and moderating roles of variables found to be significant (e.g., object of arousal, openness).

More rigorous research designs. Future research should be done using a longitudinal or experimental design rather than a correlational design. A longitudinal design would allow researchers to explore how these variables change (or not) over time. An experimental design would allow the researcher to infer causality rather than just identifying an association. It may be difficult to conduct experimental research on this topic because the issues addressed are private and some participants may not be willing to be assigned to condition. However, if participants were willing, research could possibly involve the manipulation of independent variables such as: masturbation target, frequency, and openness with one's partner to identify possible differences in the dependent variable, relationship satisfaction based on those manipulations. This information would help further explain the significant relationships found in this study.

Guilt. Although evidence for guilt as a mediator between masturbation frequency and relationship satisfaction was not found, the role of guilt in one's masturbation habits should be further researched. Specifically, openness with one's partner about masturbation moderated the

association between masturbation frequency and relationship satisfaction. For individuals who were less open with their partners regarding masturbation, there was a negative association between masturbation frequency and relationship satisfaction, whereas for individuals who were more open with their partners regarding masturbation, there was no relationship between masturbation frequency and relationship satisfaction. Future research should explore the possibility that guilt could mediate the association between masturbation frequency and relationship satisfaction for individuals who are less open with their partners regarding masturbatory habits. This would help better clarify the theoretical role guilt might play in this relationship as well as to decipher the exact nature of the negative relationship between masturbation frequency and relationship satisfaction for those who are less open with their partners regarding masturbatory habits.

Conclusion

Overall, there was not a significant relationship between masturbation frequency and relationship satisfaction. However, reason for masturbating was positively correlated with relationship satisfaction (i.e., the more pro-relationship reason for masturbating, the higher the relationship satisfaction). Target of masturbation and openness with partner about masturbation were found to significantly moderate the relationship between masturbation frequency and relationship satisfaction. These results should be interpreted with caution as there are some limitations to the study (e.g., sample is disproportionately female and from a college population, correlational design, and many measures used were created for the current study). The results of this study should be considered in counseling with individuals and couples, particularly relating to obtaining contextual information and providing psycho-education regarding masturbation habits and relationship satisfaction (e.g., addressing target or masturbation and openness with

partner). Future research in this area should seek to better clarify the nature of the relationship between masturbation frequency and relationship satisfaction by using a more diverse sample (in gender and age), studying couples together, and examining these variables in more detail and within the context of a longitudinal or experimental research design to establish directionality or causality to the relationship between masturbation frequency and relationship satisfaction.

Table 1

Current Literature on Masturbation and Relationship Satisfaction

Study	Published	N	Type of Sample	Age	Gender	Measure: Masturbation Frequency	Measure: Relationship Satisfaction	Summary of Findings
Brody & Costa (2009)	Yes	2810	Nonclinical Adults	Nationally representative of Swedish Population	Nationally representative of the Swedish Population	Frequency in past 30 days	Life Satisfaction Scale (versions LiSat-11 and LiSat-8)	Men: r = - .27 p < .001 Women: r = -.12 p < .001
Dube (2010)	No	200	College Undergraduates	M = 20.2	49% female	Frequency of masturbation per week (0 = *never* to 4 = *at least once a day*)	Global Measure of Relationship Satisfaction	r = -.04, n.s.
Hurlbert & Whittaker (1991)	Yes	82	Nonclinical Adults	M = 26.0	100% female	Four-week diary of sexual behaviors & questioned whether or not orgasm had ever been achieved through masturbation	Index of Marital Satisfaction (IMS)	Masturbators had higher relationship satisfaction than non-masturbators t(80) = -3.84 p = .018
Meadow (1982)	No	95	College Undergraduates	18 – 59 years old	100% female	Sexual Information Scale	Locke-Wallace Marital Adjustment Scale	r = -.09, n.s.
Santtila, et. al. (2008)	Yes	3604	Nonclinical Adults	33- 43 years old	Mixed	Desired and Actual Sexual Activity Scale (DASA)	Perceived Relationship Quality Components Inventory	Men: β = -.05 p < .001 Women: β = -.06 p < .001
Zamboni & Crawford (2002)	Yes	543	College Undergraduates	M = 18.6	63.7% female	Frequency in past 12 months (0 = *never* to 10 = *more than once a day*)	The Relationship Assessment Scale	r = -.12 p < .05

Table 2

Demographic Statistics

Variable	N	%
Gender		
Male	66	21.4
Female	237	76.4
Other	6	1.9
Ethnicity		
Hispanic or Latino	57	18.4
Not Hispanic or Latino	252	81.6
Race		
White	214	69.3
Black/African American	40	12.9
American Indian/Alaska Native	4	1.3
Asian	21	6.8
Native Hawaiian/Pacific Islander	1	0.3
Multiracial	29	9.4
Sexual Orientation		
Heterosexual	279	90.3
Bisexual	15	4.9
Homosexual	9	2.9
Other	6	1.9
Living Situation		
Alone	44	14.2
With a Partner	63	20.4
With a Roommate (own bedroom)	117	37.9
With a Roommate (shared bedroom)	85	27.5
Religious Affiliation		
Christian-Catholic	58	18.8
Christian-Protestant	35	11.3
Christian-Other	111	35.9
Muslim	6	1.9
Buddhist	4	1.3
Hindu	4	1.3
Jewish	3	1.0
Mormon	1	0.3
Atheist	16	5.2
Agnostic	32	10.4
None	30	9.7
Other	9	2.9

Relationship Status		
Single*	6	1.9
Casual Dating Relationship	40	12.9
Committed Dating Relationship	192	62.1
Cohabitating Dating Relationship	43	13.9
Married	21	6.8
Other	7	2.3

*Although participants identified as single, they later indicated "yes" when asked if they were currently in a romantic relationship

Table 3

Descriptive Statistics

Variable	N	Mean	Standard Deviation	Range	Possible Range
Relationship Satisfaction	309	5.97	0.95	3.00–7.00	1.00–7.00
Male	66	5.87	1.08	3.00–7.00	1.00–7.00
Females	237	6.00	0.91	3.00–7.00	1.00–7.00
Transformed Relationship Satisfaction	309	1.84	0.31	1.00–2.24	1.00–2.65
Male	66	1.82	0.35	1.00–2.24	1.00–2.65
Females	237	1.85	0.30	1.00–2.24	1.00–2.65
Masturbation Frequency	309	5.75	9.15	0.00–38.97	
Male	66	12.00	10.60	0.00–38.97	
Females	237	3.80	7.50	0.00–38.97	
Transformed Masturbation Frequency	309	2.16	1.39	1.00–5.85	
Male	66	3.27	1.41	1.00–5.85	
Females	237	1.81	1.18	1.00–5.85	
Reason for Masturbation	206	4.45	0.56	2.77–5.0	1.00–5.00
Male	59	4.21	0.57	2.89–5.00	1.00–5.00
Females	141	4.54	0.53	2.77–5.00	1.00–5.00
Transformed Reason for Masturbation	206	1.57	0.21	1.00–1.80	1.00–1.80
Male	59	1.48	0.21	1.04–1.80	1.00–1.80
Females	141	1.61	0.20	1.00–1.80	1.00–1.80
Masturbation Target	198	3.41	1.07	1.00–5.00	1.00–5.00
Male	59	2.72	0.97	1.00–5.00	1.00–5.00
Females	133	3.72	0.99	1.50–5.00	1.00–5.00

Masturbation Openness	213	3.19	1.17	1.00–5.00	1.00-5.00
Male	59	2.80	1.18	1.00–5.00	1.00–5.00
Females	148	3.32	1.14	1.00–5.00	1.00–5.00
Masturbation Guilt	309	1.83	1.05	1.00–4.82	1.00–5.00
Male	59	1.96	0.91	1.00–4.00	1.00–5.00
Females	133	1.79	1.12	1.00–4.82	1.00–5.00
Transformed Masturbation Guilt	198	1.66	0.29	1.41–2.41	1.00–2.24
Male	59	1.70	0.26	1.41–2.24	1.00–2.24
Females	133	1.64	0.31	1.41–2.41	1.00–2.24

Table 4.

Correlations of Primary Variables

Variable	Relationship Satisfaction[a]	Masturbation Frequency[a]	Reason for Masturbation[a]	Masturbation Target	Masturbation Openness	Masturbation Guilt[a]
Relationship Satisfaction[a]	-					
Masturbation Frequency[a]	-.08	-				
Reason for Masturbation[a]	.23**	-.31**	-			
Masturbation Target	.16*	-.46**	.44**	-		
Masturbation Openness	.18**	.17*	.23**	.09	-	
Masturbation Guilt[a]	-.04	-.09	-.22**	-.02	-.38**	-

[a] indicates a transformed variable
* $p < .05$
** $p < .001$

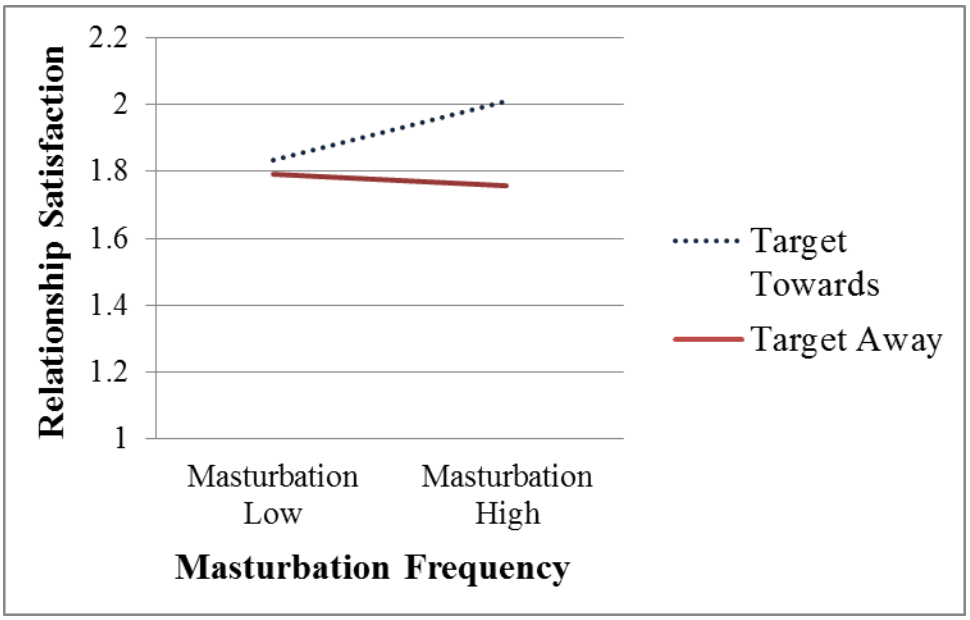

Figure 1. Moderation of masturbation target on the association between masturbation frequency and relationship satisfaction.

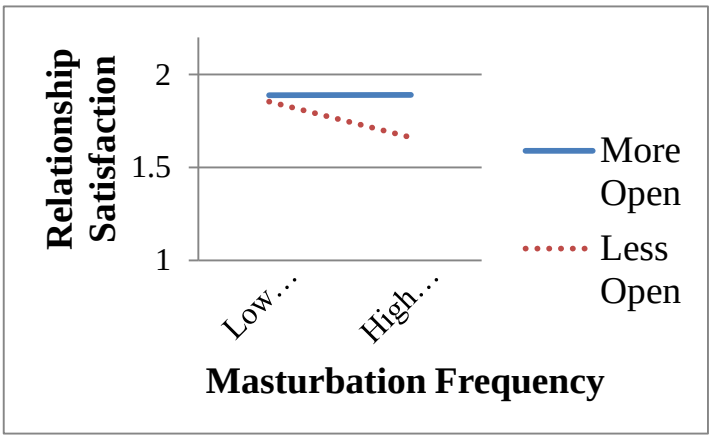

Figure 2. Moderation of openness with partner on the association between masturbation frequency and relationship satisfaction.

APPENDIX A

MEASURES

Demographic Questionnaire

Please circle the answer that best describes you.

1. What is your gender?

   Male
   Female
   Other: _____

2. What is your age? _____

3. What is your race?
   White
   Black/African American
   American Indian/Alaska Native
   Asian
   Native Hawaiian/Pacific Islander
   Multiracial _____
   Other _____

4. What is your ethnicity?
   Hispanic or Latino
   Not Hispanic or Latino

5. What is your current living situation?
   Alone
   With a partner
   With roommate (own bedroom)
   With a roommate (shared bedroom)

6. What is your sexual orientation?
   Heterosexual
   Bisexual
   Homosexual
   Other _____

7. What is your religious affiliation?
   Christian—Catholic
   Christian—Protestant
   Christian—Other
   Muslim
   Buddhist
   Hindu
   Jewish
   Mormon
   Atheist

Agnostic
None
Other _____

8. What is your marital status?
   Single
   Married
   Separated
   Divorced
   Widowed
   Other _____

9. What is your current relationship status?
   Single
   Casual Dating Relationship
   Committed Dating Relationship
   Cohabitating Committed Relationship
   Married
   Other: _____

10. What is the gender of your current partner?
    Male
    Female
    Other: _____

11. How long have you been in your current relationship? _____

12. Please estimate your current family annual income: _____

13. Please estimate the family annual income in the household in which you grew up:
    _____

14. Do you have a physical disability? If so, please list:
    Yes: _____
    No
    If yes, does your disability affect your sexual functioning?
    Yes
    No
    N/A

15. In which country were you born? _____

16. In what OTHER countries have you lived for at least three months during your lifetime?
    _____

17. What is your nationality? _____

18. What was your primary language growing up?
English
Other: _____
English and other:_____

19. What is your highest level of education?
Less than HS diploma or GED
HS diploma or GED
Some college
Associates degree
Bachelor's Degree
Master's degree
Doctoral degree

20. What is your current occupation? _____

21. Use one of the following numbers to indicate your political views in the accompanying categories.

	Very liberal (1)	Liberal (2)	Slightly liberal (3)	Middle of the road (4)	Slightly conservative (5)	Conservative (6)	Very conservative (7)
Foreign policy issues	1	2	3	4	5	6	7
Economic issues	1	2	3	4	5	6	7
Social issues	1	2	3	4	5	6	7

Masturbation Questionnaire

1. On average, how many times a month do you masturbate? _____

2. On average, how many times a week do you masturbate? _____

3. On average, how many times a day do you masturbate? _____

We are interested in the things that people do and think about while masturbating. Please answer the following questions describing your experience.

4. When you masturbate, do you generally view any external stimuli (e.g., movies, internet, etc.)? If so, please describe. _____

5. When you masturbate, please describe your most common thoughts and fantasies. _____

6. When you masturbate, please describe the primary reason for doing so. _____

7. How does masturbation influence your thoughts and feelings about your romantic relationship? _____

8. How do thoughts and feelings about your romantic relationship influence your desires and urges to masturbate? _____

9. When masturbating, how often do you masturbate to orgasm?

N/A Never Almost Never Sometimes Almost Always Always

10. When masturbating, how often do you view pornography or other erotic materials (of persons other than your partner)?

N/A Never Almost Never Sometimes Almost Always Always

11. When masturbating, how often do you fantasize about your partner?

N/A Never Almost Never Sometimes Almost Always Always

12. When masturbating, how often do you view images, videos, or other erotic material of your partner?

N/A Never Almost Never Sometimes Almost Always Always

13. When masturbating, how often do you fantasize about someone other than your partner?

N/A Never Almost Never Sometimes Almost Always Always

14. When masturbating, how often do you do so without any visual or imagined stimuli?

N/A Never Almost Never Sometimes Almost Always Always

15. How often do you masturbate because your partner is not available?

N/A Never Almost Never Sometimes Almost Always Always

16. How often do you masturbate because you and your partner are not in the same place?

N/A Never Almost Never Sometimes Almost Always Always

17. How often do you masturbate because you want sex more often than your partner does?

N/A Never Almost Never Sometimes Almost Always Always

18. How often do you masturbate because your partner is ill?

N/A Never Almost Never Sometimes Almost Always Always

19. How often do you masturbate because your partner does not know how you like to be pleasured?

N/A Never Almost Never Sometimes Almost Always Always

20. How often do you masturbate because you do not know how your partner likes to be pleasured?

N/A Never Almost Never Sometimes Almost Always Always

21. How often do you masturbate because your partner is not willing to pleasure you in the way you would like to be pleasured?

N/A Never Almost Never Sometimes Almost Always Always

22. How often do you masturbate because you are not willing to pleasure your partner in the way he or she would like to be pleasured?

N/A Never Almost Never Sometimes Almost Always Always

23. How often do you masturbate because your partner is not interested in being intimate?

N/A Never Almost Never Sometimes Almost Always Always

24. How often do you masturbate because you are not interested in being intimate with your partner?

N/A Never Almost Never Sometimes Almost Always Always

25. How often do you masturbate because you are not attracted to your partner?

N/A Never Almost Never Sometimes Almost Always Always

26. How often do you masturbate because you think that your partner is not attracted to you?

N/A Never Almost Never Sometimes Almost Always Always

27. How often do you and your partner have honest communication about your masturbation habits?

N/A Never Almost Never Sometimes Almost Always Always

28. When masturbating, how often do you feel that you should not tell your partner you have done so?

N/A Never Almost Never Sometimes Almost Always Always

29. When masturbating, how often do you feel that you cannot tell your partner you have done so?

N/A Never Almost Never Sometimes Almost Always Always

30. When masturbating, how often do you tell your partner that you have masturbated?

N/A Never Almost Never Sometimes Almost Always Always

31. When masturbating, how often do you hide the fact that you have masturbated from your partner?

N/A Never Almost Never Sometimes Almost Always Always

32. When you masturbate, how often does your partner know that you masturbated?

N/A Never Almost Never Sometimes Almost Always Always

33. When you masturbate, how often do you feel guilty for doing so?

N/A Never Almost Never Sometimes Almost Always Always

34. When you masturbate, how often do you feel shame for doing so?

N/A Never Almost Never Sometimes Almost Always Always

35. When you masturbate, how often do you feel you should not have masturbated?

N/A Never Almost Never Sometimes Almost Always Always

36. When you masturbate, how often do you feel that it was wrong that you masturbated?

N/A Never Almost Never Sometimes Almost Always Always

37. When you masturbate how often do you feel badly that you masturbated?

N/A Never Almost Never Sometimes Almost Always Always

38. When you masturbate, how often do you negatively evaluate yourself for having masturbated?

N/A Never Almost Never Sometimes Almost Always Always

39. When you masturbate, how often do you wish you had not masturbated?

N/A Never Almost Never Sometimes Almost Always Always

40. How does masturbation affect your romantic relationship?

N/A Always Hurts Mostly Hurts Neutral Mostly Helps Always Helps

Each of these scales was composed by averaging the items listed (R=Reverse coded)

Masturbation Target: 10R, 13R

Reason for Masturbating: 17R, 20R, 21R, 22R, 23R, 24R, 25R, 26R

Openness with Partner: 27, 28R, 29R, 30, 31R, 32

Masturbation Guilt: 33, 34, 35, 36, 37, 38, 39

Sexual Experience Questionnaire

For each item, please circle the frequency that best describes you and your experience.

On average, how many times a month do you have oral sex?

Never 1 - 4 5 - 8 9 – 12 more than 12

On average, how many times a month do you have anal sex?

Never 1 - 4 5 - 8 9 – 12 more than 12

On average, how many times a month do you have penile-vaginal sex?

Never 1 - 4 5 - 8 9 – 12 more than 12

On average, how many times a month do you and a partner manually stimulate one another (i.e. touching one another's genitals)?

Never 1 - 4 5 - 8 9 – 12 more than 12

When engaging in sexual activities with a partner, how often do you reach orgasm?

Never Almost Never Sometimes Almost Always Always

When having penile-vaginal sex with a partner, how often do you reach orgasm?

Never Almost Never Sometimes Almost Always Always

When engaging in mutual masturbation with a partner, how often do you reach orgasm?

Never Almost Never Sometimes Almost Always Always

When engaging in anal sex with a partner, how often do you reach orgasm?

Never Almost Never Sometimes Almost Always Always

When receiving oral sex from a partner, how often do you reach orgasm?

Never Almost Never Sometimes Almost Always Always

When engaging in sexual activities with a partner, how often does your partner reach orgasm?

Never Almost Never Sometimes Almost Always Always

What was your first consensual sexual experience? _____

_____

_____

How old were you at the time of your first consensual sexual experience? _____ .

For each of the following sexual activities, please list the AGE at which you FIRST engaged in that sexual activity. If you have NEVER engaged in a particular activity please indicate N/A.

Masturbation _____

Oral sex _____

Touching another person's genitals _____

Having another person touch your genitals _____

Anal sex _____

Penile-vaginal intercourse _____

Relationship Experience Questionnaire

Please circle the response that best describes you.

Do you have at least one good friend? Yes No

How long is your longest friendship? _____

Is it easier for you to make friends with

Same sex persons

Opposite sex persons

Have you ever been involved in a romantic relationship? Yes No

If yes,

Are you currently in a relationship? Yes No

If yes, please indicate the length of your current relationship. _____

If no, please indicate the length of your most recent relationship. _____

Approximately how many romantic relationships have you had? _____

With whom have you had romantic relationship(s):

Only same sex partners

Only opposite sex partners

Both same sex and opposite sex partners

Have you ever been unfaithful to a partner? Yes No

To your knowledge, has a partner ever been unfaithful to you? Yes No

APPENDIX B

UNIVERSITY OF NORTH TEXAS INSTITUTIONAL REVIEW BOARD

INFORMED CONSENT NOTICE

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose, benefits and risks of the study and how it will be conducted.

Title of Study: A Study of Romantic Relationships

Principal Investigator: Joshua Hook, PhD, University of North Texas (UNT) Department of Psychology.

Purpose of the Study: You are being asked to participate in a research study which involves the examination of one's sexual and relationship experiences. To participate in this study, you must currently be in a committed romantic relationship.

Study Procedures: You will be asked to fill out a survey with various questionnaires that will take about 60 minutes of your time.

Foreseeable Risks: There are no foreseeable risks of this study except for possible feelings of discomfort due to answering survey questions regarding attitudes, feelings, and experiences. If you do experience feelings of discomfort, you may contact the principal investigator who can refer you to services for counseling. You may also choose to stop participation at any point.

Benefits to the Subjects or Others: This study is not expected to be of any direct benefit to you but may contribute to the growing body of knowledge about experience and satisfaction with sexuality and relationships.

Compensation for Participants: You will receive 2 credits for your participation in this research study applied to the course you select through SONA.

Procedures for Maintaining Confidentiality of Research Records: Your participation in this study will be confidential. Identifying information will be collected only for compensation purposes, and will be destroyed once compensation is given. The confidentiality of your individual data will be maintained in any publications or presentations regarding this study.

Questions about the Study: If you have any questions about the study, you may contact Dr. Joshua Hook at telephone number 940.369.8076.

Review for the Protection of Participants: This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

Research Participants' Rights:

You have read or have had read to you all of the above and you confirm all of the following:

- You understand the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.

_____ Yes, I agree to participate

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