

Changes in sexual satisfaction across three years of the transition to parenthood predicted by
sexual communication and sexual esteem

by

Scott May

B.S., Utah Valley University, 2016

A THESIS

submitted in partial fulfillment of the requirements for the degree

MASTER OF SCIENCE

School of Family Studies and Human Services
College of Human Ecology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2019

Approved by:

Major Professor
Dr. Jared Durtschi

Copyright

© Scott May 2019.

Abstract

The transition to parenthood is a time of adjustment and challenges, as parents undergo many changes in their relationship, in their lifestyle, and in their home. The nature of the couples' romantic and sexual relationship also makes substantial shifts, such as decreases in overall relationship and sexual satisfaction during the first few years as parents. Using data from 197 German heterosexual couples transitioning to parenthood in committed relationships across three years, rates of change in sexual satisfaction of women and men were tested and assessed to what extent the expected trajectories of sexual satisfaction were linked with initial scores from both partners on sexual communication and sexual esteem using a time-invariant covariate growth curve model. Results indicated that women and men both declined in their reports of sexual satisfaction with women experiencing less of decline. Sexual communication by both women and men was the only significant predictor for positive rates of change in sexual satisfaction for women at baseline while controlling for breastfeeding, conflict, and sexual frequency. These results suggest that clinical interventions might be best focused on supporting techniques to foster sexual communication for the couple during their transition to parenthood.

Keywords: sexual communication, sexual esteem, sexual satisfaction trajectories, transition to parenthood

Table of Contents

List of Figures	vi
List of Tables	vii
Acknowledgements	viii
Dedication	ix
Chapter 1 - Introduction.....	1
Chapter 2 - Literature Review.....	4
Theoretical Foundation - Vulnerability Stress Adaptation	4
Literature Review	4
Changes in romantic relationship during transition to parenthood.....	4
Changes in sexual relationship during transition to parenthood.....	7
Sexual communication linked with sexual satisfaction.	7
Sexual esteem linked with sexual satisfaction	8
Breastfeeding.	9
Fatigue.....	10
Pain.	11
Hormones	11
Changes in relationship for men	12
Sexual frequency linked with sexual satisfaction.	13
Present Study	14
Chapter 3 - Method	16
Data.....	16
Measures	18
Sexual satisfaction.	18
Sexual communication.....	18
Sexual esteem.....	18
Control variables.....	18
Analytical Plan.....	19
Chapter 4 - Results.....	20
Preliminary Analyses (Descriptive Results)	20

Hypothesis 1	20
Unconditional Growth Model for Women’s Sexual Satisfaction	20
Unconditional Growth Model for Men’s Sexual Satisfaction	21
Hypothesis 2 & 3	22
Conditional Growth Model for Women’s Sexual Satisfaction	22
Women’s predictors of women’s sexual satisfaction.....	22
Men’s predictors of women’s sexual satisfaction.....	23
Conditional Growth Model for Men’s Sexual Satisfaction	23
Women’s predictors of men’s sexual satisfaction.	23
Men’s predictors of men’s sexual satisfaction.....	23
Chapter 5 - Discussion	25
Clinical Implications	30
Limitations	32
Future Directions	34
Conclusion	34
References.....	35

List of Figures

<i>Figure 1</i>	45
-----------------------	----

List of Tables

Table 1.	39
Table 2.	40
Table 3.	41
Table 4.	42
Table 5.	43
Table 6.	44

Acknowledgements

I want to acknowledge some key individuals who have been a tremendous support to me as I have undergone this process of completing my thesis. I want to acknowledge the time my Major Professor, Jared Durtschi has spent with me consulting and guiding me through this process as well as helping inspire me when I encountered writer's blocks. I also want to acknowledge my friend and colleague, Preston Morgan for taking time out of his busy schedule to answer my data-set or stats questions. I also appreciate all of the support of my cohort members, faculty members, and other individuals in the K-State CFT program.

Dedication

I want to dedicate this thesis to my spouse, Andi, for the countless nights she spent “running the show” with our family while I worked on finishing writing this thesis, and to our son, Danny, who was in part, the inspiration for my thesis topic.

Chapter 1 - Introduction

Perhaps one of the largest shifts a couple makes in the structure and nature of their relationship is when they have their first baby (Haugen, Schmutzer, & Wenzel, 2004). Although the experience of having a first child for a couple is often linked with increased joy, meaning, and purpose for many couples (Gottman & Notarius, 2002), this transition to parenthood has also been linked with a number of serious challenges couples face (for a review, see Gottman & Notarius, 2002; Haugen, Schmutzer, & Wenzel, 2004). For example, some of the challenges couples face as they transition to parenthood include increases in conflict (Gottman & Notarius, 2002), anxiety for partners (Trillingsgaard, Baucom, & Heyman, 2014), division of labor arguments (Keizer & Schenk, 2012), financial stresses (Pacey, 2004), and decreases in leisure time (MacDermid, Huston, & McHale, 1990), sleep (Gottman & Notarius, 2002), time spent as couple (Lawrence, Rothman, Cobb, Rothman, & Bradbury, 2008), and sex (De Judicibus & McCabe, 2002). In fact, some researchers have reported that more than half of all couples experiencing the transition to parenthood experience a moderate to severe decline in overall relationship quality (Gottman & Notarius, 2002) and that the quality of romantic relationship quality trajectories decline at a substantively steeper rate after the baby is born relative to the rate of change prior to the birth of a first child (Lawrence, Nylén, & Cobb, 2007).

Although much is known about how couples change across time in overall relationship quality, questions remain about how sexual satisfaction changes across the transition to parenthood. The sexual relationship has also been shown to change significantly during the transitioning to parenthood. For example, pregnant women in a study showed a steady decline in vaginal intercourse at their first trimester, second trimester, and in their third trimester prior to giving birth (Bartellas, Crane, Daley, Bennett, & Hutchens, 2000). Despite shifts in the nature of

the sexual relationship, not all couples experience a negative change in their sexual quality or frequency. For example, one study found that while frequency of sex may decrease, if one partner is more responsive to their partners' sexual needs or their need to not be sexually intimate, this will not impact their relationship satisfaction as much compared to those couples who have partners who lack this attunement (Muise, Kim, Impett, & Rosen, 2017).

Thus, the purpose of this study was to identify protective factors that are linked with more positive trajectories of sexual satisfaction for new mothers and fathers. It is hypothesized that couples with better sexual communication, and higher levels of sexual esteem experiences less steep declines in their rates of change in sexual satisfaction during their transition to parenthood. This study will use data from the dataset Panel Analysis of Intimate Relationships and Family Dynamics (Pairfam) looking at 197 first time German heterosexual parents across three years to assess their sexual relationship during their transition to parenthood.

The transition to parenthood can be a challenge for many couples (Don, & Mickelson, 2014) and learning how to deal with those challenges for some couples who do not have sufficient communication skills can experience this transition poorly. Results from this study can shed light on the role sexual communication plays in relationships for those transitioning to parenthood and how one's own sexual esteem (i.e. confidence in one's ability to pleasure one's partner well) is associated with changes in sexual satisfaction. These results can inform therapists' work with couples experiencing relationship difficulties during the transition to parenthood and where to potentially focus therapeutic interventions. One of the major strengths of this study is that this research focuses on clinically modifiable risk and protective factors that may be beneficial for couples' long-term relationships, especially as it relates to sexual satisfaction during the developmental phase of the transition to parenthood. Methodological

strengths of this study include a longitudinal design across three years, with data from both partners in a sample of German couples, testing dyadic growth curves of trajectories of change, evaluating both actor effects and partner effects.

Chapter 2 - Literature Review

Theoretical Foundation - Vulnerability Stress Adaptation

The vulnerability stress adaptation model (VSA; Karney & Bradbury, 1995) proposes that when couples are faced with adjusting to stressful events, how they adapt to these stressors will determine their overall experience of this adjustment. Enduring vulnerabilities are thought of as longer-term challenges a couple may face, such as experiencing divorce as a child, level of education, personality traits, or history of abuse. Stressors are conceptualized as daily fluctuations in challenging situations new parents face, such as lack of sleep, financial stress, and reduced time together as a couple. Adaptive processes are the ways in which couples respond to these challenges, such as working together as a team, openly communicating, and supporting one another. This theory assumes that all couples and individuals have certain vulnerabilities that are made up of both internal and external factors. The VSA model posits that in the intersection of these enduring vulnerabilities, stressors, and adaptations, researchers can begin to understand more holistically complex relationships between people (Karney & Bradbury, 1995). Sexual communication (Byers, 2011) proposed as a healthy adaptation for couples during the transition to parenthood that can lead to more optimal trajectories of sexual satisfaction for new first-time parents.

Literature Review

Changes in romantic relationship during transition to parenthood. Many couples experience an adjustment in their relationship with their partners as they welcome their first child to their family (Keizer, & Schenk, 2012). Partners report experiencing less affection towards each other during this transition (Goldberg & Sayer, 2004). In a study of 228 first time parents found that both women and men experienced a moderate decline in their relationship satisfaction

when assessed at 14-16 weeks during pregnancy and then at 30 months postpartum (Trillingsgaard, Baucom, & Heyman, 2014). However, De Judicibus and McCabe (2002) found that relationship satisfaction increased for pregnant women during the pregnancy stage due to the anticipation of a new child which they postulated can enhance a sense of emotional closeness between them and their partners prior to the birth of their first child. Prior to giving birth for these pregnant women, their level of relationship satisfaction was not associated with changes in sexual measures such as sexual desire, sexual frequency, and sexual satisfaction, but they did find that relationship satisfaction was a predictor of sexual desire in postpartum women (De Judicibus & McCabe, 2002). When compared to couples who do not have children, Keizer and Schenk (2012) found that for 689 British couples, for mothers and fathers who were transitioning to parenthood during their study, experienced a decrease in their relationship satisfaction. Their findings support the current trend in research that the transition to parenthood is potentially one of the more difficult times for couples and their relationships due to the many different adjustments they are required to make (Keizer & Schenk, 2012).

There are many reasons why research has shown the transition to parenthood can be stressful for couples and partners. According to Gottman and Notarius (2002), about 40 to 70% of couples experience a drop in marital quality as they transition to parenthood, the possibility for depression increases, couples become more conflictual, partner's fall-into gendered expectations around housework and child care, and frequency of sex decreases. As couples experience new joys from their new addition to their family, they also begin to experience new challenges in their relationship they may not have experienced prior to transitioning to parenthood (Pacey, 2004).

The literature has shown interesting trends on the trajectories of relationship satisfaction for couples, both those who have kids and have transitioned to parenthood, and those couples who do not have children. Researchers have found that couples who do not have children, also tend to experience a decrease in relationship satisfaction over time. MacDermid, Huston, and McHale (1990), did not find any significant differences between couples who were first-time parents and couples who did not have children with their relationship satisfaction. Both groups experienced declines in relationship satisfaction and the transitioning to parenthood couples experienced the expected decline sooner than childless couples due to having children.

Many researchers agree that for many couples over time, couples experience dips and rises in relationship satisfaction and sexual satisfaction. In a longitudinal study with 87 individuals, Byers (2005) found for couples who reported higher relationship satisfaction, they also tended to report higher rates of sexual satisfaction (2005). However, results from this study did not support the hypothesis that couples' low relationship satisfaction is not linked to a decrease in their sexual satisfaction, and vice a versa for both men and women (Byers, 2005). McNulty, Wenner, and Fisher (2016) using two longitudinal studies examined the first four to five years of the relationship for 207 marriages by examining if the frequency of sex, relationship satisfaction, and sexual satisfaction predicted each other over time. Each component of the couples' relationship declined over time, and although authors found evidence to support a positive bidirectional association between couple's sexual satisfaction and relationship satisfaction, the researchers found that initial marital satisfaction was negatively associated with changes to one's own sexual satisfaction and sexual frequency. One possible explanation for this result was that when partners are less satisfied with their relationship, they may increase efforts

to make the relationship better by making increased bids for sex, which could then potentially increase one's own report on sexual satisfaction (McNulty, Wenner, & Fisher, 2016).

Changes in sexual relationship during transition to parenthood. Couples often experience a shift in the nature of their sexual relationship when they welcome a newborn child into their relationship. For many couples who are transitioning to parenthood, sex changes for a few years and especially for the first year of parenthood (Van Brummen, Bruinse, Van de Pol, Heintz, & Van der Vaart, 2006). Some of these changes in sexual relationship are due to the frequency of sex decreasing (Gottman & Notarius, 2002), changes in sexual expectations (McNulty & Fisher, 2008), and women's unhappiness with body image (Pastore, Owens, & Raymond, 2007). For men, having more sex was positively associated with higher reports of men's relationship satisfaction, but not for their female partners (McNulty & Fisher, 2008). Researchers in a non-meta-analytic review of 48 studies on female sexual function post-childbirth, found a global decline in sexual functioning for women in their last trimester, and during the first 3-6 months postpartum (Serati et al., 2010). Some of these declines might be linked to experiencing less sexual desire and a decline in ability to orgasm (Serati et al., 2010).

Sexual communication linked with sexual satisfaction. Not many studies have looked at how sexual communication is linked with couples during their transition to parenthood. But, studies looking at long-term relationships have found that for couples who had high communication quality were more likely to report positive changes in sexual satisfaction and relationship satisfaction over time (Byers, 2011; Muise, Kim, Impett, & Rosen, 2017). Couples who are poor communicators, are more likely to report decreases in relationship satisfaction and sexual satisfaction (Byers, 2005). Couples who are more open in regard to their sexual communication—meaning if they feel they can tell their partner they feel sexually satisfied, or

they can share their sexual preferences—they tend to have higher sexual satisfaction (Montesi, Fauber, Gordon, & Heimberg, 2010). Communication about sex and topics around a couple's sex life may require greater vulnerability than what conversations around non-sexual topics would require. This is another reason why open communication about sex may have an impact on couple's overall relationship satisfaction (Montesi et al., 2010). Communication about a couple's sex life is a key factor in their sexual satisfaction (MacNeil & Byers, 2005). This is why it is important to better understand for couples who are transitioning to parenthood how they communicate about sex as may be one of the main contributors to a couple's satisfaction or dissatisfaction in their sex life and on their overall relationship satisfaction (Montesi et al., 2010).

Sexual esteem linked with sexual satisfaction. There is very little research on sexual esteem and its association with sexual satisfaction. Even fewer, if any articles, looking at these two variables in couples transitioning to parenthood. Sexual esteem could be defined as “positive regard for and confidence in the capacity to experience one's sexuality in a satisfying and enjoyable way” (Snell Jr, & Papini, 1989, p. 256). Feelings of high sexual esteem would be ones such as “I am a good sex partner” and “I would rate my sexual skill quite highly” and low feelings would be where one doubts their sexual ability as a partner or rating their confidence low (Snell Jr, & Papini, 1989, p. 258).

Women experience many physical changes to their bodies during pregnancy and postpartum. Their breasts become bigger and are engorged with milk, they usually have stretch marks, usually weigh more than prior to pregnancy, and are typically dissatisfied with their body image. Research has investigated to see if there is a link between women's body image and their sexual satisfaction and found that women's low sexual function post-partum may be attributable to low body image as women reported having lower body image after having their baby (Pauls,

Occhino, & Dryfhout, 2008). In another study, women who reported being more satisfied with their body image also reported higher sexual activity, using a higher variety of sexual behaviors, and reported more comfort undressing in front of their partners (Ackard, Kearney-Cooke, & Peterson, 2000). Other study has also looked into the association between being dissatisfied with one's appearance of their genitals and found that those women who reported higher dissatisfaction with the appearance of their genitals also reported feeling more self-conscious during intimacy. These feelings of self-consciousness were associated with lower feelings of sexual-esteem and sexual satisfaction (Schick, Calabrese, Rima, & Zucker, 2010). For those women who experience trauma to their perennial, perineum, vaginal, or anal areas, they may feel for self-conscious about the appearance of those areas post-partum and this could lead to them reporting less sexual esteem, and less sexual satisfaction.

It would be helpful to better understand if there is an association between sexual esteem and those transitioning to parenthood to better understand if the stressors parents experience might produce similar results. If men and women are experiencing difficulty in their postpartum sex life, this might be linked with lower levels of sexual esteem and sexual satisfaction. Lower levels of sexual esteem would require increased sexual communication, or increased adaption behaviors between partners which according to the VSA model would enhance their ability to manage and enhance their adjusting to the stressors of parenthood.

Breastfeeding. Not all women choose to breastfeed their children, but those that do may choose to wait longer before resuming sex with their partner than women who did not breastfeed their children (McDonald & Brown, 2013; Rådestad, Olsson, Nissen & Rubertsson, 2008; Rowland, Foxcroft, Hopman, & Patel, 2005). This could be due to the hormonal fluctuation of estrogen and progesterone that decrease during breastfeeding which then may result in a decrease

in vaginal lubrication (Rådestad et al., 2008). Similarly, breastfeeding also suppresses ovarian activity which then results in decreased hormonal production and activity by the ovaries which leads to less estrogen and progesterone, which as mentioned prior, may lead to vaginal dryness due to less lubrication being produced (Rowland et al., 2005). These factors are some of the reasons why there may be discomfort and pain for women when couples are attempting to resume sexual activity post-birth, which can have negative impacts on couple's sexual satisfaction depending on how they adjust to these new challenges. Experiencing pain and fear of pain due to hormonal changes caused by breastfeeding may contribute to changes in sexual patterns between partners which may contribute to more sexual conflict and decreased sexual behavior (Connolly, Thorp, & Pahel, 2005). This is why increased and open communication during sex would be vital for couples who have chosen to breastfeed their child per the reasons illustrated above. Men partners need to ask regarding breast and nipple sensitivity, or if there needs to be more lubrication used during sexual intercourse in order for it to be an enjoyable and satisfying experience for both partners.

Fatigue. In a sample of women in Australia, fatigue and exhaustion experienced by women in the perinatal period impacted measures of sexuality directly and indirectly (De Judicibus & McCabe, 2002; McDonald & Brown, 2013). There are many reasons why both women and men would be fatigued and exhausted during this time period, such as: less sleep (Medina, Lederhos, & Lillis, 2009), more strain on household duties and division of labor, healing from the delivery, and less quality time between partners together. While fatigue is not being explicitly measured in this study, if one or both partners are experiencing high fatigue, increasing sexual communication will result in less assumptions and less misunderstandings if partners are able to better express and communicate their sexual wants and desires during sex.

Pain. Experiencing pain in sex after childbirth is one of the main detractors for women wanting to engage in sex after childbirth. Pain during sex may be due but not always to whether either an episiotomy (i.e. a surgical cut at the opening of the vagina) or assisted vaginal delivery (e.g. using a vacuum device or forceps to help a baby out of the birth canal) occurred (De Judicibus & McCabe, 2002). Women who had vaginal assisted delivery or an episiotomy tended to delay sexual intercourse longer than the typical 6 weeks couples are requested to abstain from sexual intercourse (McDonald & Brown, 2013). Women who had tears in the vaginal, perineum, anal, or rectum area also delayed sexual intercourse on average 2.9 months (Radestad et al., 2008). These same women feared tearing their sutures from vaginal assisted delivery also often waited to re-initiate sexual intercourse until after a postpartum checkup when given verification that the sutures had fully healed. Pain was not assessed in this study, but, per these reasons, more open sexual communication would be vital for both partners to communication with each other in order to prevent pain from hampering their sex life.

Hormones. Similar to issues with breastfeeding, hormones can add to couples concerns in sexual satisfaction after giving birth. When hormones are fluctuating and dropping, this can inhibit sexual function and sexual satisfaction. Researchers find this is due to the vaginal wall becoming thinner and decreases in vaginal lubrication which can result in experiencing vaginal tenderness and soreness after intercourse (De Judicibus & McCabe, 2002). During pregnancy and production of the placenta, female bodies increase production of estrogen and progesterone to facilitate the development of the placenta and the child's growth. Once the baby is delivered and the placenta is removed, these hormones drop substantially to levels that dip below pre-pregnancy levels. The drop in estrogen is believed to contribute to the development of postpartum depression (Hendrick, Altshuler, & Sure, 1998). Men also experience a drop in

testosterone after becoming fathers (Gettler, McDade, Feranil, & Kuzawa, 2011; Gray, Kahlenberg, Barrett, Lipson, & Ellison, 2002). When compared to men without children, these two studies found that men with children reported less testosterone and it is hypothesized that spending time with children is one of the causes for this decrease (Gettler, McDade, Feranil, & Kuzawa, 2011). While the hormones of each partner was not assessed in this study, due to these factors explained above that can have potential effects on a couples sex life, having better sexual communication where the couple is able to voice and guide their partner when there are potential obstacles due to hormonal changes will more likely increase the chance of sex being a more pleasant experience for both partners.

Changes in relationship for men. There hasn't been much research explicitly on the transition to parenthood from the men's perspective. While there are many changes that women experience during the transition to parenthood, there are also ways men need to shift, adapt, and adjust in order to adjust with their partner to help maintain their relationship satisfaction, as well as their sex life satisfaction. In a study of men whose partners were in their third trimester found that a majority of the men in this sample while reporting a decrease in frequency of sex, only a third reported a decrease in their desire for sex (Rados, Vranes, & Sunjic, 2015). While these men reported having less sex, they still perceived their sexual satisfaction as being moderately high. A fear that was reported by 80 % of the men in this study was the fear of hurting their baby during intercourse, which then resulted in a decrease in having sex with their partner (Rados, Vranes, & Sunjic, 2015). Most men reported in a study that they wanted more information about fathering and fatherhood and to better understand how to adapt and adjust during their transition to parenthood and that they lacked this vital information (Deave & Johnson, 2008). The men in this study also reported feeling a need to prepare for this upcoming role before the birth of their

child (Deave & Johnson, 2008). Condon, Boyce, and Corkindale (2004) found that the men in their study anticipated to return to pre-pregnancy levels of sexual frequency but reported at the end of a year postnatal that this expectation was not met.

Research has indicated that the most challenging period during the transition to parenthood for men is during the pregnancy stage of the transition to parenthood as sexual components deteriorate in unexpected ways where more preparation may have allowed for better adjusting of their sexual expectations (Condon, Boyce, & Corkindale, 2004). To compensate for these unexpected challenges and shifts in their relationship, men drank more, experienced more frustration and were more irritable, and reported higher levels of depression a study found (Condon, Boyce, & Corkindale, 2004). Some of these findings' researchers have argued may be due to the value men place on their sexual component of their relationship (Ahlborg, Dahlof, & Hallberg, 2005).

Sexual frequency linked with sexual satisfaction. There has been substantial research linking sexual satisfaction with sexual frequency for both men and women. Research has found that the higher the frequency of sex, the less of a decline in sexual satisfaction is seen compared to what couples typically report (McNulty, Wenner, & Fisher, 2016). Many researchers have found that sexual satisfaction is highly correlated with sexual frequency (Haavio-Mannila & Kontula, 2005) and for Norwegian couples, having too little sex was a primary reason for reporting dissatisfaction with their sex life (Træen & Martinussen, 2008). Researchers have also found a bidirectional effect between sexual frequency and sexual satisfaction (McNulty & Fisher, 2008). Couples in transition to parenthood reporting engaging in less sex and reported feeling less satisfied about their sex life compared to how they felt before pregnancy (Condon et al., 2004).

Conflict linked with sexual satisfaction. Research has found that for many couples who are transitioning to parenthood, levels of conflict typically increases after the birth of their child (Doss, Rhoades, Stanley, & Markman, 2009). Conflict on finances and division of labor increases, and this conflict usually impacts couple's relationship quality and sexual satisfaction (Doss, Rhoades, Stanley, & Markman, 2009). In a longitudinal study looking at the transition to parenthood by black and white couples found that both couples report higher levels of conflict after the baby is born compared to prior and report lower levels of marital quality (Crohan, 1996). While this study did not investigate the relationship between conflict and sexual satisfaction, knowing that when couples fight, research has shown that when couples typically retreat and isolate from each other (Crohan, 1996), these behaviors would be hypothesized to lead to lower levels of sexual activity and less sexual satisfaction.

Present Study

Guided by this reviewed literature and the vulnerability stress adaption model, I propose several research hypotheses to test women's' and men's rates of change in sexual satisfaction during their transition to parenthood and assess the extent to which trajectories of sexual satisfaction can be predicted by sexual esteem and levels of sexual communication.

Hypothesis 1. Sexual satisfaction will decline for both men and women over three years of the transition to parenthood beginning at baseline and ending at the end of Wave 5.

Hypothesis 2. Better sexual communication will statistically predict less steeper declines in sexual satisfaction trajectories across three years for themselves.

Hypothesis 3. Higher levels of sexual esteem will statistically predict less steeper declines in sexual satisfaction trajectories across three years.

These hypotheses were tested while controlling for several features known to be linked with sexual satisfaction, including frequency of sex (McNulty & Fisher, 2008), conflict (Doss, Rhoades, Stanley, & Markman, 2009), and breastfeeding (Ahlborg, Dahlöf, & Hallberg, 2005).

Chapter 3 - Method

Data

These hypotheses were tested using data from the Panel Analysis of Intimate Relationships and Family Dynamics study (Pairfam; release 9.1; Brüderl et al. 2018). This dataset is a nationally representative longitudinal sample from Germany that was funded by the German Research Foundation with an expected 14 waves of data by the time they complete their study. The purpose of the Pairfam was to look at “familial processes” through a longitudinal lens (Brüderl et al. 2018, p. 5). This data set contains data from individuals in romantic relationships, their romantic partners, information from their parents, and potentially information from their children. Participants were recruited from three age cohorts, 1971-73, 1981-83, and 1991-93 and data was gathered every year (W1-W5) through computer-assisted interviews for those called the anchors. Whereas data were gathered from their partners via a mail-in paper questionnaire. The anchor’s children and parent(s) were also assessed at each time point. A more in-depth description of the Pairfam study can be found in Huinink et al. (2011) and online at <http://www.pairfam.de/en/study.html>.

The present study utilized data from anchors and partners to study how couples differ on reports of sexual satisfaction during their transition to parenthood. The starting sample size of the Pairfam data set is 13389 individuals at Wave 1. In order to verify this sample was couples who fit the criteria for transitioning to parenthood, the sample was limited to those who were in a committed relationship and who were pregnant at Wave 1 ($N = 398$), and to those where both partners reported that this child was also their first baby at Wave 1 ($N = 209$). The couples were also matched with each other to verify that they were with the same pater throughout each of the waves. The sample was also filtered out the couples who either separated, divorced, or who were

no longer together by Wave 5 which dropped 11 couples ($N = 198$). Lastly, when assessing for if couples were in a heterosexual or same-sex relationship, one anchor identified as being in a same-sex relationship, but as this person and their partner did not have any data for Waves 2-5 on any of the measures, this couple was dropped at Wave 1 ($N = 197$). Wave 1 was not used in this study as the predicting variables were not asked of anchors or partners until Wave 2.

Anchors and partners were recoded by gender to compute variables for women and men. Each Wave was also merged together to combine both the anchor and partner responses into one data file, and then each resulting Wave 2, Wave 3, and Wave 5 were merged together to form one data file with all the predicting and control variables.

For more details of the sample demographics and characteristics, refer to Table 1 . The following demographic information is based upon participants response at Wave 1, as this was when they reported being pregnant with their first child. The average age of women reported at Wave 1 was 28.32 ($SD = 5.2$) and for men it was 29.80 ($SD = 5.6$). Couples reported being in a relationship with each other on average of 6.32 years ($SD = 3.9$). A majority of the sample came from the second age cohort (i.e. 1981-1983) with 61.7% of the men participants came from this age group and 71.4% of the women participants came from this age cohort. Half the sample reported completing a 4-year college degree or the equivalent with women reporting 43.9% completing a 4-year college degree with 55.35 of the men completing a 4-year college degree. Almost more than half of women reported identifying with a religion with 43.9% reported as “not religious” while two-thirds of the male participants reported being affiliated with a religion with 28.2% reporting not being religious.

Measures

Sexual satisfaction. Sexual satisfaction was measured with a one-item question by asking both men and women in all waves (W2-W5), “All in all, how satisfied are you with your sex life” ranging from 0 (*very dissatisfied*) to 10 (*very satisfied*).

Sexual communication. Sexual communication was assessed with two question items from women and men at Wave 2. Those question items included, “If I want something specific during sexual contact, I say it or show it” and “Generally speaking, I can express my sexual needs and desires very well”. Those questions were asked on a scale from 1 (*not at all*) to 5 (*absolutely*). The mean of these two question items were computed for women and men.

Sexual esteem. Sexual esteem was also assessed with a two-item question from men and women at Wave 2. These two questions included “I am a very good sex partner” and “In general, I can fulfill the sexual needs and desires of my partner very well”. These questions ranged on a scale from 1 (*not at all*) to 5 (*absolutely*). The mean of these two questions were computed for women and men.

Control variables. These control variables were asked of the anchors at Wave 2. Frequency of sex was asked at Wave 2 (0 = *I have never had sex*, 1 = *not in the past 3 months*, 2 = *once per month or less*, 3 = *2-3 times per month*, 4 = *once per week*, 5 = *2-3 per week*, 6 = *more than 3 times per week*, 7 = *daily*). Conflict between partners was measured by two question items intended to measure conflict between partners, and partners’ annoyance with each other. Items were ranked from 1 (*never*) to 5 (*always*) and were asked in Waves 2-5. These were questions such as “How often are you and your partner annoyed or angry at each other?” and “How often do you and your partner disagree and quarrel?”. These items were adopted from the Network of Relationship Inventory (Furman & Buhrmester, 1985). Breastfeeding was coded as if

either the anchor or the partner was breastfeeding as a 1 being “is currently breastfeeding”, and 0 being “not currently breastfeeding” at Wave 2,

Analytical Plan

The purpose of this study was to test rates of change in sexual satisfaction across the transition to parenthood for women and men, and if these changes can be predicted by sexual communication and sexual esteem. Thus, these hypotheses were tested using a dyadic growth model of both partners’ sexual satisfaction simultaneously, and each partners’ reports of sexual communication, sexual esteem, and control variables at Wave 2 entered as predictors of the initial level of sexual satisfaction and as predictors of the expected trajectories of sexual satisfaction across time. First, the unconditional dyadic growth model of sexual satisfaction across three waves was tested for women and men. This model was assessed for good model fit. Good model fit was interpreted when the chi-square value for model fit was nonsignificant, the CFI greater than .95, RMSEA less than .05, and SRMR less than .06 (Kline, 2016). In this unconditional dyadic growth model, several parameters were assessed, including the average initial levels of sexual satisfaction of each partner, average rates of change in sexual satisfaction for each partner, and if there was significant variation in the initial levels and rates of change in sexual satisfaction of both partners—to justify including predictors of those growth parameters. Second, sexual communication, and sexual esteem were then entered into this dyadic growth model. Significant path coefficients from the predictors to the initial level of sexual satisfaction and to the rate of change in sexual satisfaction will be interpreted. Due to some of the variables only being asked to participants initially identified as anchors, opposed to the partners also, these paths will thus include only tests of actor-effects (e.g., women’ reports predicting women’ reports, men’ reports predicting men’ reports).

Chapter 4 - Results

Preliminary Analyses (Descriptive Results)

Prior to testing the primary hypotheses of interest, we also evaluated the means, standard deviations, and correlations among these variables. On average for men, sexual satisfaction was moderately high at Wave 2 at 6.58 ($SD = 0.89$) with women reporting slightly higher means of sexual satisfaction at Wave 2 at 6.98 ($SD = 2.28$). Both men and women's sexual satisfaction declined over time between Wave 2 and Wave 5, with women reporting slightly higher scores on sexual satisfaction at Wave 5 6.26 ($SD = 2.35$) than men did. The correlations are reported in Table 2. Several associations were noted relevant to the hypotheses of interest, including that sexual frequency was significantly associated with sexual satisfaction at Wave 2 within men ($r = .50, p < .01$) and within women ($r = .54, p < .01$). The association between conflict and sexual satisfaction at Wave 2 was significant within women ($r = -.42, p < .01$), but not significant within men. Sexual communication and sexual satisfaction were only significantly associated within men ($r = .38, p < .01$), but not significantly associated within women. Similarly breastfeeding was only significantly associated with sexual satisfaction within men ($r = -.31, p < .01$), but not for women.

Hypothesis 1

Unconditional Growth Model for Women's Sexual Satisfaction

Prior to testing the full structural growth model, it is first important to test the measurement model to establish the correct rate of change, and to ensure we are correctly modeling the rate of change in sexual satisfaction. We first tested a linear trajectory, meaning a linear rate of change where sexual satisfaction in women would either linearly increase or decrease. This model was not a good fit to the data, (e.g., $RMSEA = .11$, 90% CI .00 to .25).

Thus, the rate of change for women's sexual satisfaction was not linear, but curvilinear as most of the change happened between Wave 2 and Wave 3. Next, we freely estimated the midpoint, as suggested in Kline (2016) to best identify this rate of change in this sample. In so doing, the slope loadings were then set to 0, 2.46, and 3. This unconditional model for women's sexual satisfaction trajectories had excellent fit to the data: $\chi^2(1) = 0.00$, $p = .10$; CFI = 1.00, and RMSEA = .00 (90% CI .00 to .00). The average initial level (i.e. intercept) of sexual satisfaction was 6.99 for women, and the average rate of change (i.e., slope) across time was -.27 units per year. This rate of change was significantly steeper decline than no change at all ($p < .001$). The intercept and slope were not significantly associated, although the effect size was large ($r = -.57$, $p = .51$). There was not significant variation in the intercept or slope of women's sexual satisfaction trajectories, indicating many of the women had similar initial levels of sexual satisfaction and similar rates of change in sexual satisfaction across three years.

Unconditional Growth Model for Men's Sexual Satisfaction

A similar process was followed for testing men's sexual satisfaction trajectories in an unconditional model without any predictors. Similar to the women's trajectories reported above, men's sexual satisfaction trajectories were also not a linear rate of change, but a quadratic rate of change. The slope loadings were set at 0, 4.07, and 3. This model for men's sexual satisfaction trajectories also had excellent fit to the data: $\chi^2(1) = 0.00$, $p = .99$; CFI = 1.00, and RMSEA = .00 (90% CI .00 to .00). The average initial intercept level of sexual satisfaction was 6.60 for men ($p < .001$), and the rate of change across time was -.14 units per year. This rate of change was a marginally steeper decline than no change at all ($p = .051$). The intercept and slope were not significantly correlated ($r = .08$, $p = .51$). There was not significant variation in the intercept

or slope of men's sexual satisfaction trajectories, indicating many of the men had relatively similar initial levels and rates of change of sexual satisfaction across three years.

Hypothesis 2 & 3

Conditional Growth Model for Women's Sexual Satisfaction

Women's predictors of women's sexual satisfaction. Looking at women's sexual satisfaction with women's predictor variables, in order for the model to best fit the model and these variables, the slope loadings were changed from what was in the unconditional growth model for women's sexual satisfaction from 0, 2.46, and 3, to 0, 1, and 3 due to Heywood cases when leaving the model with the prior slope loadings. This model was a good fit to the data: $\chi^2(6) = 9.86, p = .13$; CFI = .96, and RMSEA = .06 (90% CI .00 to .11). Women's sexual satisfaction when accounting for the women's predictors and control variables at the initial level was 3.97 and their rate of change was .30. Higher reported scores on women's sexual communication at Wave 2 (the initial level) was significantly linked with higher scores on their own sexual satisfaction at Wave 2 ($b = 1.42, p < .001, \beta = .54$). Higher scores of women's sexual frequency at Wave 2 was also linked significantly with higher initial rates of sexual satisfaction ($b = .72, p < .001, \beta = .49$). Higher scores of women's report of conflict in their relationship at Wave 2 was significantly linked with lower rates of sexual satisfaction at Wave 2 ($b = -1.13, p < .01, \beta = -.38$). Higher scores of women's sexual communication at Wave 2 was marginally associated with steeper decreases of their own sexual satisfaction across three years ($b = -.32, p = .08, \beta = -.64$). Higher reports of breastfeeding at Wave 2 was marginally associated with a steeper increase of women's own sexual satisfaction across three years ($b = .35, p = .09, \beta = .45$).

Men's predictors of women's sexual satisfaction. Looking at women's sexual satisfaction with men's predictors and control variables across time, this model was a good fit to the data: $\chi^2(6) = 6.66, p = .35$; CFI = .99, and RMSEA = .02 (90% CI .00 to .10). When accounting for these predictors and control variables, women's sexual satisfaction at the initial level was 3.12 and their rate of change was -.12. Higher reported scores on men's sexual communication at Wave 2 was significantly linked with higher scores on women's initial sexual satisfaction ($b = 1.04, p < .05, \beta = .42$). Higher scores of men's reports of sexual frequency at Wave 2 was linked significantly with steeper rates of decline for women's sexual satisfaction trajectories across three years ($b = -.21, p < .001, \beta = -.69$). Higher reports of men's conflict at Wave 2 was marginally associated with steeper expected increases of women's sexual satisfaction across three years ($b = .27, p = .09, \beta = .33$).

Conditional Growth Model for Men's Sexual Satisfaction

Women's predictors of men's sexual satisfaction. After several iterations of testing this model, the model fit was consistently poor with consistent convergent problems and several Heywood cases, for example the standardized betas were 4.0, whereas standardized betas can only possibly range from -1 to 1. This was likely due to testing a fairly complex model with multiple parameters with only 197 couples. After several attempts to constrain the model, the model fit was consistently poor and was not deemed acceptable for interpretation.

Men's predictors of men's sexual satisfaction. Testing men's sexual satisfaction with men's predictors and control variables across three years, the model fit was excellent: $\chi^2(7) = 4.50, p = .72$; CFI = 1.00, and RMSEA = .00 (90% CI .00 to .06). In this model inclusive of men's predictor and control variables, men's initial sexual satisfaction level was 3.32 and their rate of change across three years was .31. Higher scores of men's sexual frequency at Wave 2

was significantly linked with higher initial scores of men's own sexual satisfaction ($b = .64, p < .001, \beta = .52$). If the female partner was breastfeeding at Wave 2 this was also significantly linked with lower scores of men's initial sexual satisfaction levels ($b = -1.70, p < .01, \beta = -.37$). None of the predicting variables in this model were significantly linked with changes in men's sexual satisfaction.

Chapter 5 - Discussion

It has been shown that there are many shifts and changes in a couple's relationship as they transition to parenthood (Gottman & Notarius, 2002). Due to these shifts in the couple's lives, women and men also experience shifts in their sexual relationship as evident from these and other's results (Medina, Lederhos, & Lillis, 2009; De Judicibus & McCabe, 2002). Data from 197 committed couples using a time-invariant covariate growth curve model to test the association between sexual satisfaction, sexual communication, and sexual esteem for partnered men and women across three years during the transition to parenthood, I found three things. First, I found support for the first hypothesis that there were overall declines in sexual satisfaction trajectories for both women and men with slight increases between Waves 3 and 5 when the baby was one and three years old, respectively. Second, I found that when controlling for breastfeeding, conflict, and sexual frequency, partial support for the second hypothesis was found. Both women's and men's sexual communication was significantly linked with women reporting higher sexual satisfaction at the concurrent time point when couples had a new baby. Third, sexual communication by women and men was not significantly linked with higher reports of men's concurrent sexual satisfaction, which did not provide full support for the second hypothesis. And lastly support for the third hypothesis was not found, that is, sexual esteem was not a significant predictor of either women's or men's sexual satisfaction even when controlling for sexual frequency, conflict, and breastfeeding.

Women and men's sexual communication when the child is a baby (Wave 2) was significantly linked with higher rates of women's sexual satisfaction when interviewed at Wave 2 when controlling for confounding variables such as if someone in their relationship is breastfeeding, conflict levels in the relationship, or the frequency of sex reported. Research has

shown that sexual frequency (McNulty and Fisher, 2008) and conflict account for a significant amount of the variance within sexual satisfaction, and because these factors along with breastfeeding were held constant in this study, this helps us to better understand the unique role sexual communication may play in couples' sexual relationship as they adjust to parenthood. Another contribution this study makes is highlighting the importance of helping both partners understand the role sexual communication may play for women's sexual satisfaction. Sexual communication may be helpful for a woman's sexual satisfaction during this adjustment to parenthood, as she adjusts to the physiological changes in her body in this post-partum phase and adjusts to the changes in her life context with a new baby. Sexual communication between partners might be especially beneficial for women and their sexual satisfaction given the multiple changes their physical, hormonal, and emotional changes they and their bodies experience post-partum.

There are many factors that might make it more challenging for a woman to have a satisfactory sexual experience with their partner post-partum such as breastfeeding, hormone level changes, and pain during sex due to assisted delivery or having an episiotomy procedure done. This is why it would be vital for men to not only be aware of the changes their partner is experiencing during the pregnancy and after, but also to be aware of the need for increased communication during sex. Some of these topics that would be essential to communicate and ask about are whether their partners breast and nipples are more sensitive due to breastfeeding, or if there needs to be additional lubrication used prior to intercourse due to decreased hormonal production which means less lubrication being produced naturally (Rowland et al., 2005). Women who experience dyspareunia (i.e., pain during sex) after childbirth was the main predictor for women reporting decreases in their sexual desire and decreases in their desire of

sexual frequency (De Judicibus & McCabe, 2002). Especially for those couples who engage in vaginal intercourse, communication by both partners will be vital to go at the pace and direction of the female partner to ensure that it is a pleasurable experience for her. Although pain during sex, assisted deliveries, and episiotomies were not assessed in this study, these common experiences also likely contribute to the importance for both men and women to be communicative during sex to potentially facilitate a more positive experience for women's sexual satisfaction.

These findings support the current evidence in the field on the importance of sexual communication for women. MacNeil and Byers (2009) reported that for both women and men who were able to better disclose their sexual preferences such as likes, and dislikes also reported higher sexual satisfaction. For women and men in this study of transition to parenthood, it is possible at least during the first three to six months of parenthood that these sexual preferences may need to shift due to all the new responsibilities and constraints that come along with having a child. How the couple communicates their sexual likes and dislikes with their partner as they are adjusting to changes their relationship may undergo during the transition to parenthood may be important for women's sexual satisfaction. Byer's (1999) and Meston and Trapnell (2005) argue that better sexual communication is one way couples are able to minimize the decrease of couples sexual satisfaction that is commonly seen in the literature around sexual satisfaction. MacNeil and Byers found that as couples are better able to communicate sexually, they are also better able to negotiate and renegotiate their sexual scripts (2005). Couples who are becoming parents are most likely going to need to renegotiate their sexual scripts due to the different time constraints and tasks of parenting that will place constraints on them and their sexual relationship as well as the other postpartum changes. This result supports the basis behind the VSA model

that as women and men adapt their sexual communication patterns and seek to increase their sexual communication to be more open, they will be more likely to adapt to the different stressors their sexual relationship will undergo during their transition to parenthood (Karney & Bradbury, 1995).

The second finding of this study was that neither women's nor men's sexual communication was found to be significantly linked with men's sexual satisfaction. MacNeil and Byers (2005) argued that the communication about a couple's sex life is a pivotal component in the couple's sexual satisfaction, but evidence for this argument was not found in this study for men. One of the potential reasons why men's sexual satisfaction was not linked with either partners' sexual communication may be that men experience less physical trauma to their reproductive and sexual organs during and after childbirth. Therefore, there would be less of a need for communication in order for sex to be satisfying for men. Another reason why sexual communication may not be significantly predictive of men's sexual satisfaction in this sample is that other studies (Byers & Demmons, 1999; MacNeil & Byers, 2009; Montesi, Fauber, Gordon, & Heimburg, 2010) who found this relationship were not using couples who were transitioning to parenthood and going through this adjustment period. Or they did not test actor and partner effects on sexual satisfaction (Mark, Jozkowski, & Kristen, 2013). In a sample of dating couples, researchers found that women who disclosed more with their partner non-sexually and sexually also reported experiencing greater intimacy, which would lead to greater sexual satisfaction (MacNeil & Byers, 2005). But, an association was not found between sexual self-disclosure and sexual satisfaction for men in their study. They hypothesized that for men, sexual self-disclosure might not lead to feelings of intimacy. Although sexual dysfunction or sexual problems were not assessed in this study, MacNeil and Byers (1997) argue that increasing sexual self-disclosure

may help when there are sexual issues or problems present in the couple's sex life. Since there is less potential for men to experience difficulty with their sexual organs as compared to their partners resulting from the birthing process of their child, their ability to have an enjoyable experience with their partner might not be as contingent on the couple's communication during sex as it might be for women in this context. Although men's sexual satisfaction was not significantly predicted by their sexual communication, men are reporting on average moderately high open levels of sexual communication (see Table 3). Thus, these results could potentially differ if men in a different sample tended to have lower average levels of sexual communication or had greater variation in scores on sexual communication between participants. This moderately high level of men's sexual communication is conceptualized as a strength in the adaptive process as described in the VSA model implying that they are making adaptations to these different stressors in their relationship to attain better outcomes with their partners (Karney & Bradbury, 1995).

The last finding of this study was that sexual esteem was not significantly predictive of women's or men's sexual satisfaction. That is, higher scores of sexual esteem was not linked with higher scores of sexual satisfaction at Wave 2 for women or men. There is very little research on the idea of sexual esteem as a variable or a construct as a component of sexual satisfaction. This might suggest that sexual esteem does not explain more variation in sexual satisfaction trajectories beyond that accounted for by sexual communication, conflict, sex frequency, and breastfeeding. It is also possible that in other samples, such as non-transition to parenthood samples, sexual esteem may be a relevant factor in other subgroups of couples. In Table 2, when looking at the zero-order correlations, we observe that sexual communication and sexual esteem were both correlated with each other with a moderate effect size. This could

indicate that one's own sexual esteem plays a role in their own sexual satisfaction, but not when placed in these models with the other factors and not in a sample of transition to parenthood couples whose sex life is experiencing distress and at a stage where there is fluctuation and instability to the stressors couples may be experiencing at that time.

Clinical Implications

Clinical interventions for couples in the transition to parenthood should focus on helping educate both partners on the physiological, mental, physical, and emotional changes that both partners will experience during this time period. While communication on these other areas outside of the sexual relationship wasn't focused on, other research has shown that couples general communication is linked with higher rates of sexual satisfaction as well (Montesi, Fauber, Gordon, & Heimburg, 2010). Interventions also should focus on helping both partners to understand the importance their sexual communication may play in their sex life as they get readjusted to the challenges of now having a child, as well as the challenges of having sex post-partum. While interventions should focus on helping women and men understand the role their communication during sex may play on their sex life, especially helping men to understand all the reasons why (e.g. the potential for adjusting their sexual scripts, expectations, and ways they engage in foreplay and intercourse) there would be a need to increase communication during sex may also be helpful.

It was found that as Men reported higher levels of frequency of sex when their baby was an infant, that over time, women reported lower levels of sexual satisfaction. Research has shown that there are times when partners have sex with their partner even when they don't want to (Impett & Peplau, 2002). Some of these reasons why women may consent to having sex with their partner is to enhance their level of intimacy, to fulfill their partners needs, to avoid tension

in their relationship, and not wanting their partner to feel rejected (Imptett & Peplau, 2002). This highlights for therapist who work with couples not just the need to help challenge couples on their communication strategies, but work with couples to create an atmosphere where both partners can authentically and honestly communicate about their sexual desires in a way that won't lead to either partner being less dissatisfied over time due to consenting but not desiring. These types of challenges may help couples see how they aren't actually helping their relationship, but providing pitfalls that may create future problems in their relationships. Some partners may think they are even helping their partner, so utilizing strategies to help challenge couples motives behind their choices may help flush out these potential obstacles.

Many couples receive lots of preventive material such as brochures and pamphlets on how to take care of the baby, how not to shake their baby, how to deal with all of the challenges of raising and caring for a baby such as breastfeeding and feeding, changing the babies diapers. Since sex for many couples is an important component of their relationship, it would also be helpful for couples to be informed about the potential obstacles their sex life may experience during pregnancy and postpartum due to many of the reasons that have been discussed prior. As it was shown how importance sexual communication is for women's sexual satisfaction, helping couples and their medical practitioners who already interact with women and their partners be provided with education material as they already have access whether during checkups or in the hospital than most therapist have would also help overcome some of these barriers and increase access for couples to learn this information.

The lack of studies on sexual communication and the transition to parenthood might indicate that there is a lack of awareness that therapists, clinicians, and other health professionals have on the role sexual communication can have on the couple who is transitioning to

parenthood. Being aware and also asking and assessing for the couple's level of how open they are able to communicate about sex in order to know how to help them will be important first steps when working with couples who are either pregnant or soon to be parents. Hertlein, Weeks, and Sendak (2009) discussed how using sensate focus is one strategy that can help couples learn how to better communicate their sexual wants and desires. This activity allows the couple to try and engage in a sensual activity and focus on practicing communicating with each other about what they are feeling and sensing when their partner does something during the exercise. For many couples this helps release the pressure to move towards orgasm and is an exercise focused on exploration mixed with relaxation techniques to allow more openness to communicate those thoughts and feelings. Clinicians and healthcare professionals would also want the couple to be aware of the potential need to communicate about the need to use lubrication, areas that are still tender or uncomfortable to be touched, communication around foreplay if the wife is breastfeeding as the breasts and nipples may be more sensitive due to breastfeeding. Romantic and erotic talk might also be suggested as an intervention for couples to practice and incorporate since women who have orgasms tend to utilize multiple stimulation and one of these ways to enhance their sexual experience could be through romantic and erotic talk (Meston, Levin, Sipski, Hull, & Heiman, 2004).

Limitations

A potential limitation is the use of a single item sexual satisfaction question. However, research has shown that single-item sexual satisfaction questions are strongly correlated with the Global Measure of Sexual Satisfaction and the New Sexual Satisfaction Scale-Short ($r = .57$; Mark, Herbenick, Fortenberry, Sanders, & Reece, 2014). Other measures such as the sexual esteem and sexual communication were both two-item measures, but both showed to have decent

reliability as evident in Table 3. One of the biggest limitations of this study is the lack of cultural and ethnic variation in the sample, therefore these results cannot be generalized to couples other than white, heterosexual couples. Another limitation is that this sample is a German couple sample. This study also had items from only the anchors, such as the sexual communication and sexual esteem measures which in some instances decreased the sample size considerably when comparing and testing the association of partner effects. The item of sexual communication did not necessarily give more information regarding how couples were talking with each other (e.g., politely and nicely vs. demandingly) regarding their sexual communication, but more about how each individual felt they were communicating in regards to asking for and advocating for their sexual wants and desires. Sexual communication for women was not significantly correlated with their own sexual satisfaction when being tested with a zero-order correlation analysis, but was a significant predictor when tested in the growth curve model. The fact that women's sexual communication wasn't significantly correlated with their own sexual satisfaction is a limitation because we would assume that they would be found to be significantly associated in both correlational and growth curve model statistical analyses. While sexual communication was predicted of women's sexual satisfaction at Wave 2, it was not significantly predictive of women's or men's sexual satisfaction across the three years. This study also had a small sample size for the type of model being tested, and with a larger sample, it would have allowed for more control variables as well as given the study more power to test the associations of the predictor and control variables and reduce the chance of a Type 2 Error. Also not testing both women and men with all of the variables at the same time in one model is a limitation that needs to be recognized. Lastly, not including both partners reports of sexual satisfaction prior to the baby's

birth does not give us comprehensive picture on the changes their sex life goes through during the entire transition to parenthood.

Future Directions

Mark et al. (2014) reported that the New Sexual Satisfaction Scale-Short has dimensions that better reflect assessing one's own and their partners sexual satisfaction, seeing how this is one of the components that changes dramatically for couples in the transition to parenthood, future research may want to utilize the NSSS-S to gain a better understanding of the dynamics between both partners. Future research could also explore what types of interventions or components of couple's therapy and sex therapy could be utilized to help educate women and men regarding how sexual communication might be helpful for them in their transition to parenthood.

Conclusion

Although sexual esteem was not a significant predictor for couples' sexual satisfaction in this study, the results on the association for sexual communication and the potential impact it may have on women's sexual satisfaction is worth incorporating for couples as they seek to maintain a satisfying and enjoyable sexual relationship during their transition to parenthood. Therapists working with couples in the midst of the transition to parenthood—couples with young children—may benefit from recognizing that on average, sexual satisfaction declines across this transition, and that improved sexual communication of both partners may help to mitigate these expected declines by allowing couples to better understand what they are feeling, experiencing, and desiring. Sexual communication may be an important ingredient for helping couples to maintain close and loving relationships across the transition to parenthood.

References

- Ackard, D. M., Kearney-Cooke, A., & Peterson, C. B. (2000). Effect of body image and self-image on women's sexual behaviors. *International Journal of Eating Disorders*, 28(4), 422-429.
- Ahlborg, T., Dahlöf, L. G., & Hallberg, L. R. M. (2005). Quality of the intimate and sexual relationship in first-time parents six months after delivery. *Journal of Sex research*, 42(2), 167-174.
- Brüderl, J., Hank, K., Huinink, J., Nauck, B., Neyer, F. J., Walper, S., Alt, P., Buhr, P., Castiglioni, L., Finn, C., Hajek, K., Herzig, M., Huyer-May, B., Lenke, R., Müller, B., Peter, T., Salzburger, V., Schmiedeberg, C., Schubach, E., Schütze, P., Schumann, N., Thönnissen, C., & Wilhelm, B. (2018) *The German Family Panel (pairfam)*. GESIS Data Archive, Cologne. ZA5678 Data file Version 9.1.0, doi: 10.4232/pairfam.5678.9.1.0.
- Brüderl, Josef; Hajek, Kristin; Herzig, Michel; Lenke, Rüdiger; Müller, Bettina; Schütze, Philipp (2018): pairfam Data Manual. Release 9.1, LMU Munich, Technical report.
- Byers, E. S., & Demmons, S. (1999). Sexual satisfaction and sexual self-disclosure within dating relationships. *Journal of Sex Research*, 36(2), 180-189.
- Byers, E. S. (2005). Relationship satisfaction and sexual satisfaction: A longitudinal study of individuals in long-term relationships. *Journal of Sex Research*, 42(2), 113-118.
- Byers, E. S. (2011). Beyond the birds and the bees and was it good for you?: Thirty years of research on sexual communication. *Canadian Psychology/Psychologie Canadienne*, 52(1), 20-28. doi:<http://dx.doi.org.er.lib.k-state.edu/10.1037/a0022048>
- Condon, J. T., Boyce, P., & Corkindale, C. J. (2004). The first-time fathers study: A prospective study of the mental health and wellbeing of men during the transition to parenthood. *Australian and New Zealand Journal of Psychiatry*, 38(1-2), 56-64.
- Crohan, S. E. (1996). Marital quality and conflict across the transition to parenthood in African American and White couples. *Journal of Marriage and the Family*, 933-944.
- Deave, T., & Johnson, D. (2008). The transition to parenthood: what does it mean for fathers? *Journal of Advanced Nursing*, 63(6), 626-633.
- De Judicibus, M. A., & McCabe, M. P. (2002). Psychological factors and the sexuality of pregnant and postpartum women. *Journal of Sex Research*, 39(2), 94-103.
- Don, B. P., & Mickelson, K. D. (2014). Relationship satisfaction trajectories across the transition to parenthood among low-risk parents. *Journal of Marriage and Family*, 76(3), 677-692.

- Doss, B. D., Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2009). The effect of the transition to parenthood on relationship quality: an 8-year prospective study. *Journal of Personality and Social Psychology, 96*(3), 601.
- Furman, W., & Buhrmester, D. (1985). Children's perceptions of the personal relationships in their social networks. *Developmental Psychology, 21*, 1016–1024.
- Gettler, L. T., McDade, T. W., Feranil, A. B., & Kuzawa, C. W. (2011). Longitudinal evidence that fatherhood decreases testosterone in human males. *Proceedings of the National Academy of Sciences, 108*(39), 16194-16199.
- Goldberg, A. E., & Sayer, A. (2006). Lesbian couples' relationship quality across the transition to parenthood. *Journal of Marriage and Family, 68*(1), 87-100.
- Gottman, J. M., & Notarius, C. I. (2002). Marital research in the 20th century and a research agenda for the 21st century. *Family Process, 41*(2), 159-197.
- Gray, P. B., Kahlenberg, S. M., Barrett, E. S., Lipson, S. F., & Ellison, P. T. (2002). Marriage and fatherhood are associated with lower testosterone in males. *Evolution and Human Behavior, 23*(3), 193-201.
- Haugen, E. N., Schmutzer, P. A., & Wenzel, A. (2004). Sexuality and the partner relationship during pregnancy and the postpartum period. In Harvey, J. H., Wenzel, A., & Sprecher, S. (Eds.). (2004). *The Handbook of Sexuality in Close Relationships*. Psychology Press.
- Hertlein, K. M., Weeks, G. R., & Sendak, S. K. (2009). *A clinician's guide to systemic sex therapy*. New York, NY: Routledge.
- Hendrick, V., Altshuler, L. L., & Suri, R. (1998). Hormonal changes in the postpartum and implications for postpartum depression. *Psychosomatics, 39*(2), 93-101.
- Huinink, Johannes, Josef Brüderl, Bernhard Nauck, Sabine Walper, Laura Castiglioni, and Michael Feldhaus. 2011. Panel Analysis of Intimate Relationships and Family Dynamics (pairfam): Conceptual framework and design. *Zeitschrift für Familienforschung - Journal of Family Research 23*: 77-101.
- Impett, E. A., & Peplau, L. A. (2002). Why some women consent to unwanted sex with a dating partner: Insights from attachment theory. *Psychology of Women Quarterly, 26*(4), 360-370.
- Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, methods, and research. *Psychological bulletin, 118*(1), 3.
- Kline, R. B. (2016). *Principles and practice of structural equation modeling, fourth edition*. New York, NY: The Guilford Press.

- Keizer, R., & Schenk, N. (2012). Becoming a parent and relationship satisfaction: A longitudinal dyadic perspective. *Journal of Marriage and Family, 74*(4), 759-773.
- Lawrence, E., Nylén, K., & Cobb, R. J. (2007). Prenatal expectations and marital satisfaction over the transition to parenthood. *Journal of Family Psychology, 21*(2), 155.
- MacNeil, S., & Byers, E. S. (2005). Dyadic assessment of sexual self-disclosure and sexual satisfaction in heterosexual dating couples. *Journal of Social and Personal Relationships, 22*(2), 169-181.
- MacDermid, S. M., Huston, T. L., & McHale, S. M. (1990). Changes in marriage associated with the transition to parenthood: Individual differences as a function of sex-role attitudes and changes in the division of household labor. *Journal of Marriage and the Family, 475-486*.
- Mark, K. P., Herbenick, D., Fortenberry, J. D., Sanders, S., & Reece, M. (2014). A psychometric comparison of three scales and a single-item measure to assess sexual satisfaction. *The Journal of Sex Research, 51*(2), 159-169.
- Meston, C., Levin, R., Sipski, M., Hull, E., & Heiman, J. (2004). Women's orgasm. *Annual Review of Sex Research, 15*, 173-257.
- Muise, A., Kim, J. J., Impett, E. A., & Rosen, N. O. (2017). Understanding when a partner is not in the mood: Sexual communal strength in couples transitioning to parenthood. *Archives of Sexual Behavior, 46*(7), 1993-2006.
- McDonald, E. A., & Brown, S. J. (2013). Does method of birth make a difference to when women resume sex after childbirth?. *BJOG: An International Journal of Obstetrics & Gynaecology, 120*(7), 823-830.
- McNulty, J. K., & Fisher, T. D. (2008). Gender differences in response to sexual expectancies and changes in sexual frequency: A short-term longitudinal study of sexual satisfaction in newly married couples. *Archives of Sexual Behavior, 37*(2), 229-240.
- Montesi, J. L., Conner, B. T., Gordon, E. A., Fauber, R. L., Kim, K. H., & Heimberg, R. G. (2013). On the relationship among social anxiety, intimacy, sexual communication, and sexual satisfaction in young couples. *Archives of Sexual Behavior, 42*(1), 81-91.
- Nakić Radoš, S., Soljačić Vraneš, H., & Šunjić, M. (2015). Sexuality during pregnancy: What is important for sexual satisfaction in expectant fathers?. *Journal of Sex & Marital Therapy, 41*(3), 282-293.
- Pastore, L., Owens, A., & Raymond, C. (2007). Postpartum sexuality concerns among first-time parents from one US academic hospital. *The Journal of Sexual Medicine, 4*(1), 115-123.

- Rådestad, I., Olsson, A., Nissen, E., & Rubertsson, C. (2008). Tears in the vagina, perineum, sphincter ani, and rectum and first sexual intercourse after childbirth: A nationwide follow-up. *Birth*, 35(2), 98-106.
- Rowland, M., Foxcroft, L., Hopman, W. M., & Patel, R. (2005). Breastfeeding and sexuality immediately post partum. *Canadian Family Physician*, 51(10), 1366-1367.
- Schick, V. R., Calabrese, S. K., Rima, B. N., & Zucker, A. N. (2010). Genital appearance dissatisfaction: Implications for women's genital image self-consciousness, sexual esteem, sexual satisfaction, and sexual risk. *Psychology of Women Quarterly*, 34(3), 394-404.
- Træen, B., & Martinussen, M. (2008). Extradysparenic activity in a random sample of Norwegian couples. *Journal of Sex Research*, 45(4), 319-328.
- Trillingsgaard, T., Baucom, K. J., & Heyman, R. E. (2014). Predictors of change in relationship satisfaction during the transition to parenthood. *Family Relations*, 63(5), 667-679.
- Van Brummen, H. J., Bruinse, H. W., Van de Pol, G., Heintz, A. P. M., & Van der Vaart, C. H. (2006). Which factors determine the sexual function 1 year after childbirth?. *BJOG: An International Journal of Obstetrics & Gynaecology*, 113(8), 914-918.

Table 1.*Sample Characteristics of German couples in the same relationship across 3 years (N = 197)*

Variable	Men (% or M)	Women (% or M)
Age	29.80	28.32
Birth Cohort		
1971-1973	32.10	21.40
1981-1983	61.70	71.40
1991-1993	6.20	7.10
Education		
Completed a 4-year college degree	55.30	43.90
Did not compete a 4-year college degree	44.70	56.10
Religion		
Catholic	36.50	22.80
German Protestant	21.20	24.60
Islam	12.90	3.50
Judaism	0	0
Other Christian Religion	1.20	5.30
Other Religion	0	0
Not Religious	28.20	43.90
Country of Birth		
Federal Republic of Germany	64.2	62.5
German Democratic Republic	16.0	14.3
Turkey	2.5	0
Russian Federation	1.2	10.7
Poland	4.9	0
Romania	0	1.8
Kazakhstan	1.2	3.6
Bosnia-Herzegovina	1.2	1.8
South Eastern Europe	0	1.8
North, West, Central Europe	1.2	1.8
Middle East and Hindu Kush	1.2	0
Asia	3.7	0
Africa	2.5	1.8

Table 2.*Women and Men's Predictors, Criterion Variables, and Covariates: Correlations (N = 197)*

Variables	1	2	3	4	5	6	7	8
1. Sexual Satisfaction W2	.43**	.38**	.30*	.38**	.20	.50**	-.04	-.31**
2. Sexual Satisfaction W3	.68**	.47**	.44**	.30	.24	.25	-.12	-.08
3. Sexual Satisfaction W5	.61**	.61**	.47**	.05	-.01	.14	-.08	-.16
4. Sexual Communication W2	.27	.26	.01	–	.56**	.31*	-.03	.06
5. Sexual Esteem W2	.12	.14	-.00	.58**	–	.02	.03	.12
6. Frequency of Sex W2	.54**	.51**	.32	.22	.20	–	.06	-.28*
7. Conflict W2	-.42**	-.18	-.35	.19	.10	-.25	–	-.14
8. Breastfeeding W2	-.12	-.03	.12	-.06	.02	-.31*	.03	–

Note. Women's correlations are below the diagonal and men's correlations are above the diagonal. The correlations that are in the middle of the diagonal are women's variables correlated with men's variables.

* $p < .05$. ** $p < .01$, two tailed.

Table 3.*Men and Women Predictors, Criterion Variables, and Covariates:**Descriptive Statistics (N =197)*

Variables	<i>M</i> or %	<i>SD</i>	Range	α
Women's Sexual Satisfaction W2	6.98	2.28	0-10	
Women's Sexual Satisfaction W3	6.07	2.43	0-10	
Women's Sexual Satisfaction W5	6.26	2.35	0-10	
Men's Sexual Satisfaction W2	6.58	.89	0-10	
Men's Sexual Satisfaction W3	6.02	2.48	0-10	
Men's Sexual Satisfaction W5	6.01	2.52	0-10	
Women's Sexual Communication W2	3.98	.72	1-5	.89
Men's Sexual Communication W2	3.74	.93	1-5	.85
Women's Sexual Esteem W2	3.74	.76	1-5	.62
Men's Sexual Esteem W2	3.77	.89	1-5	.88
Men Breastfeeding W2 ^a	21%		0-1	
Women Breastfeeding W2 ^a	39%		0-1	
Women's Conflict W2	2.51	.68	1-5	.74
Men's Conflict W2	2.68	.55	1-5	.77
Women's Sex Frequency W2 ^b	3.51	1.35	0-7	
Men's Sex Frequency W2 ^b	3.51	1.50	0-7	

^aBreastfeeding: 0 = *Not currently breastfeeding*, 1 = *Currently breastfeeding*.^bSex Frequency: 0 = *I have never had sex*, 1 = *not in the past 3 months*, 2 = *once per month or less*, 3 = *2-3 times per month*, 4 = *once per week*, 5 = *2-3 per week*, 6 = *more than 3 times per week*, 7 = *daily*

Table 4.*Summary of Time-Invariant Covariate Growth Curve Analysis for Men's Variables**Predicting Men's Sexual Satisfaction (N = 197)*

Variable	Men's SS Intercept			Men's SS Slope		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Sexual Communication W2	.49	.41	.24	-.06	.14	-.14
Sexual Esteem W2	.21	.41	.11	.02	.14	.05
Frequency of Sex W2	.64***	.18	.52	-.08	.06	-.35
Conflict W2	-.50	.59	-.15	-.02	.20	-.03
Breastfeeding W2	-1.70**	.62	-.37	.25	.21	.28
<i>R</i> ²		.68			.30	

Note: **p* < .05. ***p* < .01. ****p* < .001.

Table 5.*Summary of Time-Invariant Covariate Growth Curve Analysis for Women's Variables**Predicting Women's Sexual Satisfaction (N = 197)*

Variable	Women's SS Intercept			Women's SS Slope		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Sexual Communication W2	1.42***	.41	.54	-.32	.19	-.64
Sexual Esteem W2	-.60	.41	-.23	.08	.19	.16
Frequency of Sex W2	.72***	.19	.49	0.00	.08	.02
Conflict W2	-1.13**	.39	-.38	.09	.16	.16
Breastfeeding W2	.19	.48	.05	.35	.21	.45
<i>R</i> ²		.69			.57	

*Note: *p < .05. **p < .01. ***p < .001*

Table 6.

Summary of Time-Invariant Covariate Growth Curve Analysis for Men's Variables Predicting Women's Sexual Satisfaction (N = 197)

Variable	Women's SS Intercept			Women's SS Slope		
	<i>b</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Sexual Communication W2	1.04*	.50	.42	-.16	.14	-.33
Sexual Esteem W2	.15	.52	.06	.13	.14	.25
Frequency of Sex W2	.37	.23	.24	-.21***	.06	-.70
Conflict W2	-.62	.57	-.15	.27	.16	-.33
Breastfeeding W2	-.93	.82	-.17	-.06	.23	-.06
<i>R</i> ²		.39			.81	

*Note: *p < .05. **p < .01. ***p < .001.*

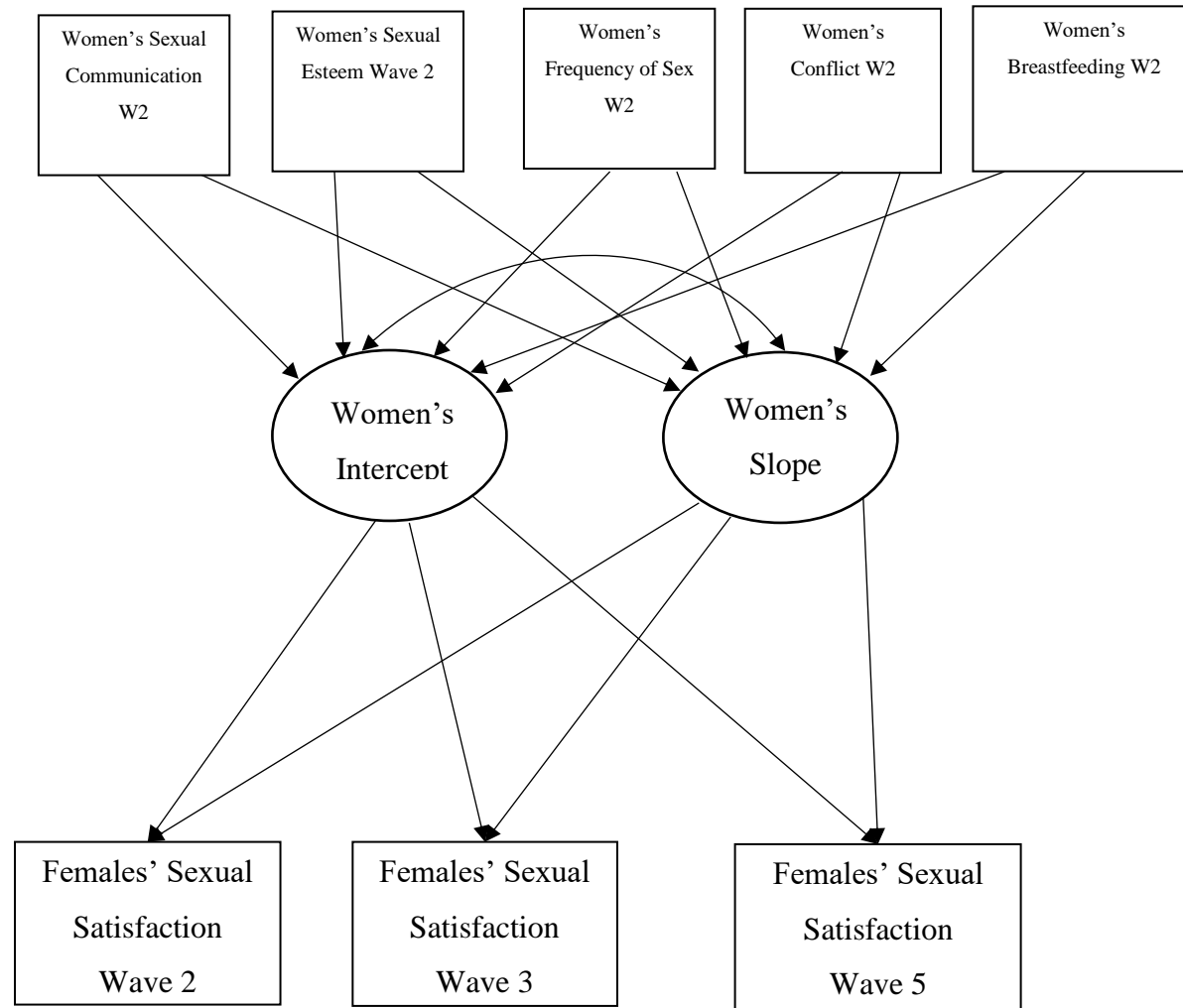


Figure 1

This illustrates the time-invariant covariate growth curve model that tests to if better sexual communication and higher sexual esteem scores at Wave 2 are significantly associated with initial levels of sexual satisfaction and rates of change in sexual satisfaction in women across three years. Although this model is only showing women's growth model of sexual satisfaction, this will be tested with men's growth model of sexual satisfaction with the same predictors in a similar model except for the intercept, slope, and outcome variables will be men's reports instead of women's reports.