

THE IMPACT OF INFERTILITY ON RELATIONSHIP SATISFACTION, MENTAL
HEALTH, AND EXPECTATIONS DURING THE TRANSITION TO PARENTHOOD

by

Jill Giresi

Liberty University

A Dissertation Proposal Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

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[April, 2024]

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ABSTRACT

This study examined the relationship between the method of conception (assisted reproductive technology [ART] vs. spontaneous conception) and the associations between parenting expectations, psychological distress, and relationship satisfaction. First-time parents ($N=100$) completed an online questionnaire within the first six months postpartum. Results indicated a significant difference in reported postpartum relationship satisfaction between couples who conceived via ART and those who conceived spontaneously, with ART couples reporting higher relationship satisfaction. This result was in the opposite direction than what was hypothesized. All other results were as expected. Postpartum relationship satisfaction was negatively associated with both unrealistic parenting expectations and psychological distress. Mediation analysis indicated that unrealistic parenting expectations partially mediated the association between the method of conception and relationship satisfaction. Couples who conceived via ART reported more realistic parenting expectations, which predicted higher relationship satisfaction. A second mediation analysis indicated that psychological distress mediated the association between the method of conception and relationship satisfaction. Couples who conceived via ART reported more psychological distress, which predicted poorer relationship satisfaction. Taken together, results suggest that couples with a history of infertility who complete successful ART treatments may develop some positive outcomes (e.g., more realistic parenting expectations), but may also experience negative outcomes (e.g., increased anxiety and depression) that persist through the postpartum period. Clinical and research implications are discussed, and future research directions are suggested.

Keywords: Transition to parenthood, relationship satisfaction, parenting expectations, psychological distress

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Dedication

To my heavenly babies Dylan, Baby Giresi A, B, and C. You have each taught me more about strength and resilience than I could have ever learned on my own.

To Mikayla, you are my greatest accomplishment and most precious gift.

All I am and everything I do is for you.

I love you.

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CHAPTER 1: INTRODUCTION TO THE STUDY

Introduction

The transition to parenthood marks a time in a couple's life filled with uncertainty (Welch et al., 2019). Even though this time is classified as a positive time for most, it is also described as being stressful, isolating, and is a high-risk period for increased marital conflict (for review, see Cowan & Cowan, 1995; Doss et al., 2009) and the deterioration of marital satisfaction (for review, see Mitnick et al., 2009). This pattern is also associated with poor parenting practices (Amato, 2000). There are enormous personal, social, and economic costs associated with marital distress and family breakdown (Amato, 2000). Moreover, this is a transition that most couples (90%) go through (Feldman, 2020), so further evaluation of dyadic processes at this pivotal time is warranted. Specifically, individual cognitive factors (such as parenting expectations), individual mental health factors (such as postpartum depression), and couple factors (such as satisfaction) will be explored. Lastly, with the rise of assisted reproductive technology (ART) for couples' infertility issues (Hamilton et al. 2022), this study will also examine the potential impact a couple's history of infertility may have on the transition to parenthood. Most existing research has focused on the infertility experience leading up to potential parenthood, rather than the actual parenting experience itself (Sirevičiūtė & Jarašiūnaitė-Fedosejeva, 2022). Previous research in this area has resulted in somewhat mixed findings, including both positive (Paterlini et al., 2021) and negative (Agostini et al., 2020; Allan et al., 2021b; Warmelink et al., 2023) impacts on couples with a history of infertility transitioning to parenthood (Hammarberg et al., 2008).

Background

Relationship Adjustment Trends Through the Transition to Parenthood

Around the mean trend, there is great variability in couple relationship satisfaction across the transition to parenthood. Only about 20% of couples report increased relationship adjustment during this transitional period (Dawson et al., 2023; Shapiro et al., 2000). Specifically, this increase in satisfaction appears to be associated with a deepening of relationship intimacy brought on by the new, shared parenting role (Shapiro et al., 2000). However, it is documented that roughly 50% of all new parents report a decline in relationship satisfaction. Specifically, 35% report a small or moderate decline, and 12% display a severe decline in relationship satisfaction (Mitnick et al., 2009).

This pattern is less known for heterosexual couples with a history of infertility (Sirevičiūtė & Jarašiūnaitė-Fedosejeva, 2022) and the research findings are somewhat mixed. For example, Repokari et al. (2007) found no significant difference in marital satisfaction one year postpartum between couples who conceived via ART and those who spontaneously conceived. However, Warmelink et al. (2002) reported that those who conceived via ART experienced decreased social functioning and marital satisfaction compared to those who spontaneously conceived.

Parental Depression During the Transition to Parenthood

Meta-analysis suggests that mild postpartum depression is extremely common, while diagnosable depression occurs at higher rates in postpartum women (10-30%) than at any other time in a woman's life cycle (Liu et al., 2022). Maternal depression predicts poor maternal-infant bonding, emotional and cognitive deficits in the infant (Liu et al., 2022), higher rates of insensitive parenting (Shapiro et al., 2000), and later problems in a

child's cognitive, social, and behavioral development (Liu et al., 2022). Anxiety and depression are commonly related to parental perceptions of a lack of parenting competence and concerns about the infant's health (Johansson et al., 2021). Many couples report needing advice and support in managing infant caregiving (Baker & Yang, 2018; Gleeson et al., 2019; Shapiro et al., 2000). There are fewer studies on the mental health of new fathers than new mothers, but a recent meta-analysis suggests that about 8-9% of fathers suffer from postnatal depression (Rao et al., 2020).

A strong association exists between deteriorating couple relationship satisfaction and maternal depression (Beach et al., 2003). Maternal depression predicts deteriorating relationship satisfaction (Johansson et al., 2021). Conversely, a supportive and healthy couple relationship predicts recovery from maternal depression (Johansson et al., 2021). This suggests a mutual, reciprocal influence between maternal depression and relationship well-being (Walker et al., 2019). Women who perceive their male partner as supportive report greater parenting competence and sensitivity and less depression and worry (Johansson et al., 2021). Less is known about the impact of couples' infertility on parental depression and anxiety. Some recent studies indicate that women who conceived through ART experience more depression and anxiety than women who conceived spontaneously (Hammarberg et al., 2008; Sirevičiūtė & Jarašiūnaitė-Fedosejeva, 2022; Warmelink et al., 2022). Therefore, these women (and their partners) may exhibit additional needs prenatally and postnatally (Warmelink et al., 2023).

Parental Expectations During the Transition to Parenthood

Expectant parents form a range of expectations about parenthood in reaction to the uncertainties of the impending shift, most of which are positive (Riggs et al., 2018).

Expectations are formed through social comparison of others' experiences as viewed through digital media (Amaro et al., 2019; Greyson et al., 2019; Kang & Liu, 2019; Rhee et al., 2021) and via comparison of one's relationship with others' marital relationships (Morry & Sucharyna, 2019). However, real experience doesn't always fulfill these expectations, which can cause distress (Harwood et al., 2007; Lawrence et al., 2007) and negative self-reflection (Padoa et al., 2018). According to the expectation violation theory, negative expectation violations result in adverse judgments (Fiske & Taylor, 2021). Specifically, expectancy violations in general (regardless of valence), elicit increased attention to the meaning of the perceived violation. As a result, a poorer overall transition has been associated with negatively violated expectations about parenthood, particularly those related to maternal competence and satisfaction (Powell & Karraker, 2019).

Relationship dissatisfaction has also been connected to negatively violated parental expectations (Mitnick et al., 2022). For heterosexual couples, traditional gender roles are often maintained when an infant is born (Biehle & Mickelson, 2012). Women most often take primary childcare responsibility, even when both partners are in paid employment (Lévesque et al., 2020). Some women become highly invested in parenting, and some fathers report feeling discouraged from engaging in childcare (Bäckström et al., 2021; Cox et al., 1999; Huusko et al., 2018). Related, men particularly tend to report an increasing obligation to provide financial support to their growing family; as a result, these new fathers tend to increase their hours of work following the birth of their child, leaving less time at home to engage in parenting duties (Gottman & Notarius, 2000; Scharrer et al., 2021). Relationship expectations that are negatively violated are,

theoretically, expected to increase ambiguity about both the violator and the relationship itself. Sustained periods marked by uncertainty have been shown to negatively affect relationship adjustment and stability (Mitnick et al., 2022). It is less clear how a history of infertility, which is filled with periods of uncertainty and relationship distress (Allan et al., 2021a), may impact the transition to parenthood (Ranjbar et al., 2020). Hammarberg et al. (2008) suggest that past infertility may be associated with more idealized expectations for parenthood. Therefore, if expectations are idealized it's plausible to hypothesize that some may be unrealistic and more prone to be negatively violated.

Biblical Foundations

Several Bible passages reference the importance of mutual respect in relationships, family, raising children, and the power of unity, as male and female become one. As one formed a relationship with God, this is mirrored in one's romantic relationships. From this perspective, marriage includes both spiritual and emotional unity (e.g., Rezaei et al., 2020). The transition to parenthood is a pivotal time for couples to rely on one another to navigate the new experiences and challenges they may face.

“Haven't you read,” he replied, “that at the beginning the Creator ‘made them male and female,’ and said, ‘For this reason a man will leave his father and mother and be united to his wife, and the two will become one flesh’? So they are no longer two, but one flesh. Therefore what God has joined together, let no one separate” (*New International Bible*, 1978/2011, Matthew 19:4-6).

Research supports the notion that individuals and couples who engage in more spiritual and religious experiences, compared to those who do not, report less marital conflict and overall stress, more collaborative communication (Mahoney et al., 2021), and greater

relationship satisfaction (Browne et al., 2022). Further, couples engaging in high spiritual intimacy who have experienced infertility have also reported less stress and feelings of failure compared to those who reported low spiritual intimacy (Rezaei et al., 2020). Specifically, high spiritual intimacy was linked to better problem-solving and better resolution of life crises (Rezaei et al., 2020).

Importantly, in the face of life challenges (e.g., mental health, navigating new parenting roles) it is important to not only rely on one's spouse for support but to maintain mutual respect. In times of stress, individuals may mistakenly displace their anger on loved ones. Scripture, however, reminds individuals of the importance of loving one another, especially in times of crisis: "However, each one of you also must love his wife as he loves himself, and the wife must respect her husband" (*New International Bible*, 1978/2011, Ephesians 5:33). Spiritual intimacy has been found to positively predict couples' intimacy skills (e.g., sharing one's fears and insecurities) for new parents (Padgett et al., 2019).

Problem Statement

Although roughly 50% of first-time parents experience a decrease in relationship satisfaction (Cowan & Cowan, 1995; Doss et al., 2009), a history of infertility may complicate and compound the issue. The impact of relationship satisfaction on individuals and families is far-reaching. Poor relationship quality is predictive of depression (Beach et al., 2003), mortality in those with serious illnesses (Coyne et al., 2001), and lower immune function (Kiecolt-Glaser & Wilson, 2017). It is particularly important to consider relationship satisfaction as couples become parents. Parent relationship dissatisfaction is linked to child anxiety, aggression, internalizing and

externalizing behavior problems, insecure parent-child attachment, and poor parent-child relationship quality (Amato, 2000).

The increase in assisted reproductive technology (ART) for couples experiencing infertility (Hamilton et al., 2022) has made it necessary to examine the potential impact of infertility on marital satisfaction and parenting expectations during the transition to parenthood. Although infertility and failed ART are associated with poor life satisfaction, self-esteem, emotional well-being, and psychological distress (Hammarberg et al., 2008), it is unclear whether these outcomes persist during pregnancy and after childbirth (Allen et al., 2021a). Research on the effects of ART during the transition to parenthood can be best described as emergent and with mixed results (Hammarberg et al., 2008). Early findings suggest that pregnancy after ART results in high levels of initial anxiety and depression (Warmelink et al., 2022); however, results that extend to the postpartum period are inconclusive, especially after adjusting for infant temperament (Hammarberg et al., 2008). Pregnancy after ART may be idealized, which may affect the development of parenting expectations (Agostini et al., 2020), levels of anxiety and depression (Warmelink et al., 2022), and overall marital satisfaction (Hammarberg et al., 2008; Warmelink et al., 2022).

Taken together, the transition to parenthood is a relatively common process that couples experience; however, some couples report deterioration in relationship satisfaction while others report stable or even more positive relationship satisfaction during this time. Therefore, couple and parenting interventions targeting this time are essential to help make the transition smoother and more supportive. However, more data is needed to identify high-risk couples and specific couples' needs and unique

experiences during this transition. The purpose of the current study is to evaluate marital satisfaction during the transition to parenthood for couples who spontaneously conceived (SC) versus those who used ART. Further, parenting expectations and psychological distress (e.g., anxiety and depression) were also measured and compared between SC and ART couples to assess potential mechanisms for a change in marital satisfaction through the transition to parenthood.

Purpose of the Study

The purpose of this quantitative, correlational survey study was to examine whether the association between a couple's history of infertility and relationship satisfaction is mediated by parenting expectations and psychological distress in heterosexual couples transitioning to parenthood.

Research Questions and Hypotheses

Research Questions

RQ1: How do heterosexual couples who experienced infertility differ in relationship satisfaction from those who spontaneously conceived during the transition to parenthood?

RQ 2: What is the association between parenting expectations and relationship satisfaction for heterosexual couples during their transition to parenthood?

RQ 3: What is the association between psychological distress and relationship satisfaction for heterosexual couples during their transition to parenthood?

RQ 4: Do parenting expectations mediate the association between the method of conception and relationship satisfaction during the transition to parenthood?

RQ 5: Does psychological distress mediate the association between the method of conception and relationship satisfaction during the transition to parenthood?

Hypotheses

Hypothesis 1: Couples with a history of infertility will report significantly poorer relationship satisfaction compared to couples who spontaneously conceived during the postpartum period.

Hypothesis 2: Unrealistic parenting expectations (as reflected by higher scores on the Perception of Parenting Inventory) will be negatively correlated with relationship satisfaction in the postpartum period.

Hypothesis 3: Psychological distress will be negatively correlated with relationship satisfaction in the postpartum period.

Hypothesis 4: Unrealistic parenting expectations (as reflected by higher scores on the Perception of Parenting Inventory) will mediate the association between the method of conception and relationship satisfaction in the postpartum period.

Hypothesis 5: Psychological distress will mediate the association between the method of conception and relationship satisfaction in the postpartum period.

Assumptions and Limitations of the Study

One limitation of this study is that it only examined the transition to parenthood in heterosexual couples. Findings cannot be generalized to same-sex couples or individuals who identify as parents in other ways (e.g., adoptive parents). The sole use of survey data in this quantitative study relied on individuals to accurately report their psychological distress, parenting expectations, and relationship satisfaction. As such, participant response bias may have affected the accuracy of the data. That said, it is assumed that

participants answered questions honestly. Another limitation is that there was only one data collection time point. Therefore, by using this chosen study design it is impossible to know if there are longer-term effects of the method of conception on relationship satisfaction.

Theoretical Foundations of the Study

According to Bernstein's (1990) theory, issues such as increased anxiety about losing the fetus, poorer maternal confidence, and a delay in mother-infant attachment may be linked to a history of infertility and conception through the use of ART. The results of later studies on the pregnancies of women who conceived through fertility treatment supported Bernstein's theory. Compared to women who conceived naturally, ART users reported more stress during pregnancy (Smorti & Smorti, 2012). In addition, women who used ART had lower confidence compared to women who spontaneously conceived and reported more postpartum depressive symptoms (Allan et al., 2021a). They also experienced higher levels of anxiety during pregnancy due to their fear of miscarriage (Allan et al., 2021a; Hammarberg et al., 2008; Sirevičiūtė, & Jarašiūnaitė-Fedosejeva, 2022; Smorti & Smorti, 2012). Women who have received ART struggle to adjust to parenthood from the beginning of pregnancy onward while experiencing anticipatory grief and anxiety over the possibility of losing the pregnancy or newborn (Sirevičiūtė, & Jarašiūnaitė-Fedosejeva, 2022; Warmelink et al., 2023).

Scripture teaches us the importance of mutual respect in relationships, “Be devoted to one another in love. Honor one another above yourselves” (*New International Bible*, 1978/2011, Romans 12:10). Mutual respect in romantic relationships also helps build and maintain necessary social bonds, particularly in times of need. The challenges

new parents face are multifaceted and can feel isolating. Humans require social interaction, as learned through the story of Adam and Eve. “The Lord God said, ‘It is not good for the man to be alone. I will make a helper suitable for him’” (*New International Bible*, 1978/2011, Genesis 2:18). God made Eve from Adam’s rib so he would not be alone, illustrating how essential these social bonds are in our lives. “That is why a man leaves his father and mother and is united to his wife, and they become one flesh” (*New International Bible*, 1978/2011, Genesis 2:24). Couples who can maintain being united as one, especially through difficult times, provide a strong foundation for when a couple is ready to expand their family. Many biblical passages discuss the significance of building a family through child-rearing. One such is, “Children are a heritage from the LORD, offspring a reward from him. Like arrows in the hands of a warrior are children born in one’s youth” (*New International Bible*, 1978/2011, Psalm 127:3-5).

Definition of Terms

The following is a list of definitions of terms that were used in this study.

Infertility – Defined as the absence of conception or inability to maintain pregnancy after a minimum of 12 consecutive months of unprotected sex (Centers for Disease Control [CDC], 2023).

Psychological Distress – In this study, psychological distress was measured by symptoms of postpartum depression and postpartum anxiety. Postpartum depression was defined as a major or minor depressive episode within four weeks to six months after childbirth. Postpartum anxiety included a range of symptoms that may include excessive worry, restlessness, irritability, sleep disturbances, and intrusive thoughts in the period following childbirth (American Psychiatric Association, 2013).

Parenting Expectations – Defined as beliefs parents have about their child’s behavior and their child-rearing practices (Lawson, 2004).

Relationship Satisfaction – Defined as the perceived quality of the relationship (Kluwer, 2010).

Significance of the Study

The impact of relationship satisfaction on individuals and families has far-reaching implications. Poor relationship satisfaction is a predictor of depression, mortality in those with serious illnesses, and lower immune system functioning in individuals. It is imperative to consider relationship satisfaction, especially in new parents, as parent relationship dissatisfaction is linked to child anxiety, aggression, internalizing and externalizing behavior problems, insecure parent-child attachment, and poor parent-child relationship quality. With the increasing use of ART for couples experiencing infertility, it is necessary to examine the potential impact of infertility on marital satisfaction and parenting expectations during the transition to parenthood. While infertility and failed ART are associated with poor life satisfaction, self-esteem, emotional well-being, and psychological distress, it remains unclear whether these outcomes persist during pregnancy and after childbirth.

The transition to parenthood is a common process that couples undergo, yet some couples navigate this transition better than others. Therefore, couple and parenting interventions targeting this period are essential to help make the transition smoother and more supportive. However, further research is necessary to identify high-risk couples and specific couples’ needs and unique experiences during this transition. It is hoped that the

data from this study can help inform more tailored and effective interventions for new parents.

Summary

In sum, this body of research suggests that the transition to parenthood can affect the trajectory of new parents' relationship satisfaction. Therefore, clinical intervention via prenatal or early postnatal classes could provide instrumental support to couples during this transitional time. Specifically, research suggests that helping foster more realistic parenting expectations and managing one's mental health may be key focal factors for intervention. Further, with the rise of couples seeking assisted reproductive technology due to infertility, more research needs to be conducted on whether the transition to parenthood is significantly different for these couples compared to couples who spontaneously conceived. While infertility has been linked to increased depression, anxiety, and marital conflict, less is presently known about whether these factors persist through pregnancy and after childbirth. This study sought to explore whether parental expectations and mental health mediate the relationship between the method of conception and relationship satisfaction for new parents. This study's findings are hoped to increase the effectiveness of prenatal and postnatal classes for new parents by way of identifying high-risk couples and informing specific content to include in interventions. The following chapter will delve further into previous research related to the study topic. Namely, a literature review and Biblical foundations related to relationship satisfaction

through the transition to parenthood as that relates to prior infertility, mental health, and expectations will be explored.

CHAPTER 2: LITERATURE REVIEW

Overview

The transition to parenthood is a pivotal time for couples, often described as a period that is both happy and stressful (Welch et al., 2019). New parents often experience a decrease in marital satisfaction and an increase in marital conflict during this transition (Mitnick et al., 2009). This pattern is exacerbated by couples' unrealistic expectations about how parenting may affect one's mental health, sleep deprivation, the division of labor, and marital quality (Harwood et al., 2007).

While these patterns have been generally established in the literature, it is less known how a history of infertility may impact a couple's transition to parenthood. With the increasing use of assisted reproductive technology (ART; Hamilton et al. 2022), it would be beneficial to further study this population of new parents to further elucidate their experiences during this transition. For example, it is unclear whether prior infertility buffers against or exacerbates postpartum mental health symptoms. Additionally, research related to one's expectations of parenthood is lacking with the ART couple population and therefore presently unknown if these couples differ in their expectations and experiences compared to couples who spontaneously conceive. Lastly, prior research is mixed regarding whether couples who conceive spontaneously significantly differ from those who conceive via ART on measures of postpartum marital satisfaction. Taken together, more exploration is needed in these areas. This literature review will summarize research to date that has examined these topics. A biblical worldview will also be applied to this topic by referencing Scripture.

Description of Search Strategy

The articles used in this review were mostly obtained from Google Scholar, PsychInfo, PsychARTICLES, and the ProQuest Psychology Database. Search terms used included “transition to parenthood,” “relationship satisfaction,” “marital satisfaction,” “unrealistic expectations,” “expectation violation,” “postpartum depression,” “postpartum anxiety,” “infertility,” “assisted reproductive therapy,” and “spontaneous conception.” Additional searches were conducted with the words “review” or “meta” to attempt to locate any literature reviews or meta-analyses on the selected topic. Both seminal papers were reviewed as well as research that was conducted within the last five years. While research on the transition to parenthood is quite established, there is a significant drop-off in studies specifically examining this transition for couples who have struggled with infertility. Upon reviewing both seminal papers and literature reviews, a secondary search was conducted on all papers that have cited those works to help locate the most up-to-date research in these areas.

The application of Biblical foundations was employed by studying the Bible. First, passages related to forming unrealistic expectations of another (e.g., via judgment) were explored using the *New International Bible*. Second, due to the isolation and deteriorating relationship satisfaction many new parents report during this transitional time, passages related to the importance of establishing meaningful connections with others were also explored. Third, the importance of family, the marital bond, and child-rearing are common themes throughout the Bible. Beyond awareness and knowledge of such passages gained through Bible study, the following search terms were used in the *New International Bible* to locate additional passages: “mutual respect,” “respect

husband,” “marriage,” “parents,” “children,” “judgment” and “support.” Additionally, a literature review was conducted via the databases listed above using the terms “transition to parenthood” and “spirituality” or “religiosity.” The research in this area was particularly lacking. Therefore, as noted above, an additional search was conducted on papers that have more recently cited the studies that were located via the search strategy above to ensure a thorough search and that the most recent research in this area was reviewed.

Review of Literature

Relationship Satisfaction Trends Through the Transition to Parenthood

The transition to becoming parents is a time of both personal and interpersonal changes and can introduce unforeseen challenges. When a couple welcomes their first child, it significantly impacts their marital dynamics as the relationship shifts from being focused on the couple to including the child (Repokari et al., 2007). Generally, marital relationships appear to be particularly vulnerable during this transition, with various studies revealing a decline in marital satisfaction and an increase in conflict among parents (Cowan & Cowan, 2000; Doss et al., 2009; Schoppe-Sullivan et al., 2022; Shapiro et al., 2000).

According to Shapiro et al. (2000), there is considerable variability in couple relationship satisfaction during the transition to parenthood. Only 20% of couples experience an increase in relationship adjustment during this period. This rise in satisfaction seems to be linked to a deepening of relationship intimacy resulting from the new, shared parenting role. However, research conducted by Mitnick et al. (2009) indicates that approximately 50% of new parents report a decrease in relationship

satisfaction. Specifically, 35% report a slight or moderate decline, while 12% exhibit a severe decline in relationship satisfaction. The decline in relationship satisfaction seems related to a range of factors. For example, becoming a parent typically is associated with decreases in disposable income, personal free time, frequency and enjoyment of sex, and quality time shared just with the partner, each of which is often reported to be stressful (Cowan & Cowan, 1995; Feeney et al., 2001). During this transition and after the birth of one's child, couples typically have less free time than previously, engage in less relationship-focused conversations, and negative communication patterns often increase due to a limited capacity to inhibit emotions brought about by exhaustion (Falconier et al., 2015; Gottman & Notarius, 2000). This may be critical when couples need to manage role sharing and role overload.

For heterosexual couples, traditional gender roles are often maintained when an infant is born. Women most often take primary childcare responsibility, even when both partners are in paid employment (Feeney et al., 2001; Gottman & Notarius, 2000). Some women become highly invested in parenting, and some fathers report feeling discouraged from engaging in childcare (Cox et al., 1999). Related, men particularly tend to report an increasing obligation to provide financial support to their growing family; as a result, these new fathers tend to increase their hours of work following the birth of their child, leaving less time at home to engage in parenting duties (Gottman & Notarius, 2000). The added financial strain typically affects younger couples, couples who have been married for fewer years, who are less educated, and are of lower socioeconomic status compared to couples who did not have these related factors (Cox et al., 1999).

Most couples perceive these significant changes in partner roles negatively (Cox et al., 1999), and role strain is evident in almost all couples due to the added responsibilities of parenting while also meeting the previously established demands of being a spouse and working (Falconier et al., 2015; Feeney et al., 2001). The increasing gender role specialization can also be the basis of couple estrangement and deterioration in relationship satisfaction (Shapiro et al., 2000). Specifically, this tends to be most impactful for new mothers. For women, relationship satisfaction after the baby arrives is predicted in part by her spouse's ability to meet her expectations regarding sharing parental responsibilities and offering support (Mitnick et al., 2022).

The strain of providing constant infant care is often difficult for parents to manage. For example, during the newborn stage, parents often suffer from sleep deprivation (Cox et al., 1999). Given this, perhaps it is not surprising that individual partner well-being often declines as people become parents. The demands of parenting a newborn infant can also place severe strain on a couple's relationship. Some of the most significant changes a baby brings include a diminished sexual relationship, a reduced frequency of shared positive activities, poorer communication (Gottman & Notarius, 2000), as well as strains over role sharing (Cox et al., 1999). Most couples experience some difficulty in coordinating the demands of the parent role with those of worker and spouse in the transition to parenthood. These changes lead to a substantial deterioration in relationship satisfaction for about a third of couples, which is associated with an increased risk of separation (Lawrence et al., 2007; Mitnick et al., 2009; Shapiro et al., 2000).

Predictors of Adjustment to Parenthood

A wide range of variables predicts couple adjustment across the transition to parenthood. There are some well-established predictors of couple relationship satisfaction across the lifespan that impact new parents and include negative family-of-origin experiences (particularly parental divorce or violence), low available social support from extended family or friends, a pre-existing psychological disorder in either partner, and poor couple communication (Kingsbury et al., 2022). Poor couple communication also predicts poorer parent-child relationships (Cox et al., 1999).

Research has also examined the role of adult attachment on relationship satisfaction. Attachment systems are designed to gain proximity to attachment figures, a process that operates differently in individuals with distinct attachment styles (Mikulincer & Shaver, 2007). Securely attached individuals are typically able to gain proximity to their attachment figures successfully, using healthy behaviors (e.g., requesting support and showing affection; Mikulincer & Shaver, 2007). This can largely be attributed to the availability and responsiveness of their caregivers in the past (Bowlby, 1973). Insecurely attached individuals, however, have failed to gain proximity to attachment figures in the past, and tend to resort to less healthy means of gaining proximity in adulthood (e.g., threatening to leave the relationship).

Individuals with an anxious attachment style have experienced past attachment figures as inconsistently available (Bowlby, 1973). Consequently, anxiously attached individuals exhibit hyperactivation of their attachment system in adulthood, marked by strong attempts to gain proximity to attachment figures and hypervigilance to cues that attachment figures may be leaving or disengaging from them (Mikulincer & Shaver, 2007). Individuals with avoidant attachment, on the other hand, have typically

experienced past attachment figures as closed off and unavailable (Bowlby, 1973). Thus, as adults, avoidantly attached individuals exhibit a deactivation of the attachment system, often exhibited as an inhibition of proximity-seeking, an emphasis on self-reliance and independence, and a denial of emotional needs that may lead individuals to approach another person for support (Mikulincer & Shaver, 2007). Results of adult attachment and relationship satisfaction have been somewhat mixed, but overall patterns indicate a negative correlation between anxious and avoidant attachment styles and poorer relationship satisfaction (Kluwer, 2010).

Other predictors of couple adjustment after childbirth are specific to the lifestyle changes and roles that occur when becoming a parent. For example, poor couple adjustment is predicted by an unplanned pregnancy (Cox et al., 1999); the distribution of parental and other family obligations that are thought to be unjust (Feeney et al., 2001); difficult childhood temperament (Kingsbury et al., 2022); premature birth and other concerns regarding infant health (e.g., sleeping, feeding; de Paula Eduardo et al., 2019); and unrealistic and inconsistent spousal parental expectations and a low sense of parenting competence (Riggs et al., 2018). Further, O'Reilly-Treter et al. (2020) found that unmarried, cohabitating couples were more likely to break up and reported poorer relationship adjustment and less commitment to the relationship compared to expectant couples who were married through this transitional period.

In sum, variables that predict a couple's adjustment to parenthood fall into static and dynamic factors (Halford et al., 2003). Static factors cannot be changed at the time of intervention but can identify a couple's level of risk for adjustment problems. From the evidence reviewed above, the best-established static risk indicators are negative family-

of-origin experiences (e.g., parental divorce or violence), adult attachment style, partner history of psychological disorder, unplanned pregnancy, infant prematurity, and difficult infant temperament. On the other hand, dynamic risk factors can form targets for intervention. The best-established dynamic risk factors are poor couple communication, ineffective mutual support, lack of other social support, unrealistic expectations, and poor infant care knowledge and skills.

Parental Mental Health During the Transition to Parenthood

As previously mentioned, the strain of providing constant care for a newborn is often very difficult for parents to manage, particularly for the woman who often takes a primary role in caregiving (Clements & Markman, 1996). According to a meta-analysis by Liu et al. (2022), mild postpartum depression is highly prevalent, while diagnosable depression occurs at higher rates among postpartum women (10-30%) than during any other stage of a woman's life cycle. Postpartum depression can persist for months or years (Rosander et al., 2021). Further, the trajectory of postpartum depression is quite disparate in that some report experiencing depression almost immediately following childbirth and others do not initially experience symptoms until a few months postpartum (Rosander et al., 2021). The occurrence of maternal depression has been linked to negative outcomes in maternal-infant bonding and the infant's emotional and cognitive development (Liu et al., 2022). It is also associated with higher rates of insensitive parenting (Shapiro et al., 2000) and subsequent difficulties in the child's cognitive, social, behavioral, and emotional development (Liu et al., 2022).

Anxiety and depression often coincide with parental perceptions of inadequate parenting skills and concerns regarding the infant's well-being (Johansson et al., 2021).

Many couples express the need for guidance and support in navigating the challenges of infant caregiving (Shapiro et al., 2000). While there is less research on the mental health of new fathers compared to new mothers, a recent meta-analysis by Rao et al. (2020) suggests that approximately 8-9% of fathers experience postnatal depression. Moreover, there is a substantially higher concordance of depression between partners than just chance association; consequently, many young children have two parents suffering from depression.

Maternal depression and deteriorating couple relationship satisfaction are also closely linked (Beach et al., 2003). Research has shown that maternal depression is a predictor of declining relationship satisfaction, while a supportive and healthy couple relationship can contribute to recovery from maternal depression (Johansson et al., 2021). This highlights a reciprocal and mutually influential dynamic between maternal depression and relationship well-being. Additionally, when mothers perceive positive relationship satisfaction, parenting stress tends to be lower (Florsheim et al., 2003). Moreover, women who view their male partners as supportive report higher levels of parenting competence and sensitivity, along with reduced depression and worry (Johansson et al., 2021). Postpartum anxiety has various effects on child rearing, influencing the parent-child relationship, parenting behaviors, and child development. Anxious parents may experience difficulties in bonding with their child, leading to potential challenges in forming a secure attachment (Smythe et al., 2022). Furthermore, postpartum anxiety can have long-term consequences, including an increased risk of anxiety disorders in the child (Prenoveau et al., 2017).

Postpartum anxiety is a complex and prevalent mental health concern that can significantly impact the lives of both mothers and fathers as they navigate the transformative journey of parenthood (Fawcett et al., 2019). Postpartum anxiety manifests in various forms, with individuals experiencing a range of symptoms that may include excessive worry, restlessness, irritability, sleep disturbances, and intrusive thoughts (American Psychiatric Association, 2013). While it often coexists with postpartum depression, research has shown that up to 75% of women with postpartum anxiety also experience symptoms of depression (Cox et al., 1987). The intricate interplay between these two conditions further underscores the importance of understanding and addressing postpartum anxiety. When it comes to estimating the prevalence of anxiety disorders in postpartum women, studies have reported varying figures, but the range falls between 5% and 12% (Goodman et al., 2016). However, emerging research suggests that the actual percentage might be even higher, reaching approximately 20% to 25% (Prenoveau et al., 2017). Furthermore, within the first six weeks following childbirth, there appears to be a peak incidence rate of 15% to 20% (Fawcett et al., 2019). While the focus has primarily been on mothers, it is crucial to recognize that fathers also experience postpartum anxiety, albeit at a lower rate. A meta-analysis conducted by Leiferman et al. (2020) indicates that approximately 10% of new fathers report increased anxiety in the postpartum period. The intensity and duration of these symptoms can significantly impact the individual's overall well-being and their ability to care for their newborn and themselves (Fawcett et al., 2019; Goodman et al., 2016; Prenoveau et al., 2017). Therefore, it is crucial to understand and address

postpartum anxiety to mitigate potential long-term consequences and ensure the well-being of the entire family unit.

Long-Term Trajectories of the Impact of the Transition to Parenthood

As noted above, meta-analyses show a modest decline in relationship satisfaction and an increase in depressive symptoms (particularly for mothers) through the transition to parenthood (Mitnick et al., 2009). Johansson et al. (2021) reported that 14.9% of mothers and 11.5% of fathers reported depressive symptoms at two-and-a-half years postpartum suggesting a more persistent trajectory for depressive symptoms following the birth of one's child. Similarly, a meta-analysis by Fawcett et al. (2019) indicated that postpartum anxiety symptoms were still evident in 7% of women two years after childbirth.

Grolleman et al. (2022) examined the long-term stability of self-esteem and emotion regulation during the transition to parenthood. New mothers and fathers experience a minor decrease in these variables early in this transitional period (Grolleman et al., 2022). Further, when examined through four years after the birth of one's child, longitudinal results showed an overall increase in both emotional regulation and self-esteem compared to prenatal levels. Grolleman et al. (2022) identified that a critical period in this trajectory occurred about one-and-a-half years postnatally.

Infertility, Relationship Adjustment, and Mental Health

In the United States, approximately 19% of women in their childbearing years, experience difficulties getting and staying pregnant (Centers for Disease Control [CDC], 2023). The psychological and physiological risks and effects of infertility treatments often leave residual symptoms. These symptoms include reproductive loss, risks

associated with in vitro fertilization, financial costs and burdens, and the potential interference of a mother's ability to bond with her newborn. The residual effects of infertility and the experiences of IVF are often long-lasting (Bakhtiyar et al., 2019).

Research suggests that couples who have experienced infertility may face unique challenges when transitioning to parenthood (Allan et al., 2021a; Sirevičiūtė & Jarašiūnaitė-Fedosejeva, 2022). For example, many couples report trauma or grief related to their infertility experience, struggles with emerging parenthood identity, and anxiety about future pregnancies (Allan et al., 2021a). These studies, unsurprisingly, report increased marital conflict and stress and decreased relationship satisfaction while undergoing ART (Ranjbar et al., 2020). Further, infertile couples who conceived via ART have reported higher levels of depression and anxiety during pregnancy compared to those who conceived spontaneously (Smorti & Smorti, 2012). However, most related research to date is limited to examining couples during ART and the antepartum period (Smorti & Smorti, 2012). Therefore, less is known about the long-term effect infertility has on a couple's relationship adjustment and mental health in the postpartum period.

Infertility and Relationship Satisfaction

Infertility can profoundly impact relationship satisfaction, affecting various aspects of the couple's emotional well-being, communication patterns, and overall satisfaction in their relationship. Research has shown that infertility-related stress can contribute to increased emotional distress, decreased marital satisfaction, and greater relationship difficulties among couples experiencing infertility (Hammarberg et al., 2008; Ranjbar et al., 2020). The inability to conceive can lead to intense feelings of sadness, frustration, and grief, and couples may experience a sense of loss, as their expectations of

starting a family are not being realized (Paterlini et al., 2021). This heightened emotional burden can create tension and strain the relationship, leading to difficulties in communication and problem-solving (Ranjbar et al., 2020).

Further, infertility treatments often last months or years. Treatments are often expensive and add financial burden for many couples; and for some, this leads to increased marital conflict (Repokari et al., 2007; Smorti & Smorti, 2012). Additionally, because infertility treatments often involve medical procedures, hormone treatments, and timed intercourse, this process often hinders a couple's sexual relationship (Luk & Loke, 2017). Research has suggested that the focus on timed intercourse and the pressure to conceive can overshadow emotional intimacy and lead to reduced sexual satisfaction and poorer relationship adjustment (Leeners et al., 2023). Moreover, couples experiencing infertility may feel isolated from their social networks, as it can be challenging to share their experiences with those who have not gone through similar struggles (Vioreanu, 2021). This isolation can lead to a sense of loneliness, strain the couple's support system, and further deteriorate their perceived relationship satisfaction (Vioreanu, 2021). However, due to the variability in relationship satisfaction through the transition to parenthood, it has also been suggested that having a baby does not directly create distress or bring couples closer together but rather amplifies existing difficulties, potentially leading to a deterioration of the relationship (Cowan & Cowan, 1995; Mitnick et al., 2009).

Comparisons between couples who conceived spontaneously and those who used assisted reproductive technology (ART) have demonstrated significant differences in marital relationships. Even though an infertility diagnosis can be stressful for couples,

many individuals who used ART indicated that the process helped to strengthen their relationship and some women expressed that successful pregnancy outcomes after ART helped to protect from marital dissolution (Maehara et al., 2022). Couples who successfully conceived through ART have reported greater marital cohesion, indicating a mutual sense of being a couple and sharing thoughts and experiences (Santona et al., 2023). They also experience more stable relationships and less overall marital distress; in general, they have a more positive view of their partners compared to couples who conceive spontaneously (Fisher et al., 2008). On the other hand, there are also reports of increased marital conflicts among ART parents compared to control groups (Roshanaei et al., 2022). However, some studies have found no significant differences in marital satisfaction between ART couples and couples who conceive spontaneously (Klock & Greenfeld, 2000). Collectively, these studies suggest that there are incongruous findings related to the association between infertility and relationship satisfaction.

Possible reasons for these conflicting findings are that research in this area has been limited to cross-sectional design and relied on relatively small sample sizes. Follow-up longitudinal studies have also produced somewhat contradictory findings. For example, one study followed ART couples and their control counterparts from pregnancy until their children turned one year old (Sydsjö et al., 2002). They discovered that ART couples did not experience a decrease in marital satisfaction during the child's first year, unlike control couples. However, a separate study tracked ART couples and control couples from early pregnancy to six months post-partum and found no between-group difference in marital satisfaction (Hjelmstedt et al., 2004).

Infertility and Mental Health

The experience of infertility can profoundly impact couples, leading to heightened levels of anxiety that permeate various aspects of their lives (Maehara et al., 2022; Ranjbar et al., 2020). The complexities of medical procedures involved in ART often contribute to the distressing nature of this journey. Specifically, couples facing infertility struggles frequently express that navigating these daunting medical procedures is both challenging and stressful (Smorti & Smorti, 2012). Furthermore, one of the distressing aspects is the inherent uncertainty associated with ART, as there is no guarantee of successful outcomes (Allan et al., 2019b). The psychological burden carried by couples dealing with infertility is often amplified by the emotional toll of failed treatment cycles or the experience of pregnancy loss. The psychological impact of such setbacks can be overwhelming, further exacerbating symptoms of anxiety (Maehara et al., 2022; Ranjbar et al., 2020). Indeed, Hammarberg et al. (2008) found that individuals experiencing infertility commonly report symptoms of generalized anxiety disorder, a condition characterized by excessive and uncontrollable worrying, as well as specific anxieties related to the fertility treatment process (American Psychiatric Association, 2013).

In addition to increased anxiety symptoms, infertility has also been linked to an exacerbation of depressive symptoms. Smorti and Smorti (2012) found higher rates of depressive symptoms among individuals facing infertility compared to the general population. The long-term stress and emotional strain associated with infertility can lead to feelings of sadness, hopelessness, and loss of interest in daily activities (Vioreanu, 2021). Further, infertility is associated with increased blame and guilt within the couple. Partners may engage in self-blame, questioning their own worthiness or feeling responsible for the infertility issue (Gameiro & Finnigan, 2017). Additionally, one

partner may blame the other, leading to resentment and marital dissatisfaction (Peterson & Place, 2019). These feelings of blame and guilt can erode trust and intimacy, further deteriorating relationship satisfaction.

The grieving process that accompanies the inability to conceive can also contribute to depressive symptoms (Peterson & Place, 2019). Importantly, this research has mostly focused on females going through infertility treatments. Less is known about the short- and long-term implications that infertility may have on males. Some preliminary analyses suggest that these men may experience greater depressive symptoms, but not anxiety symptoms compared to men who spontaneously conceived (Paterlini et al., 2021)

Parenting Expectations During the Transition to Parenthood

Preparing for the arrival of a child can cause a spectrum of anticipations, ranging from positive to negative, concerning parenthood. This comes as a response to the uncertainties accompanying this impending transition, with most of these expectations being favorable in nature (Riggs et al., 2018). Nevertheless, the actual lived experience of parenthood does not always align with these initial expectations, consequently giving rise to distress (Lawrence et al., 2007). According to the expectation violation theory, the occurrence of negative expectation violations gives rise to unfavorable judgments (Dijksterhuis & van Knippenberg, 1998, as cited by Hamilton 2005; Fiske & Taylor, 2021). More specifically, in accordance with this theoretical framework, violations of expectations, irrespective of their valence, prompt heightened attention toward the significance of the perceived violation. Consequently, individuals with negatively violated parenting and partner expectations tend to experience a poorer transition to

parenthood particularly related to maternal satisfaction and competence (Powell & Karraker, 2019).

Furthermore, people are only content when their expectations for romantic connections are at least as high as what they think they could get from other partnerships (Fiske & Taylor, 2021). These predictions have been supported by research, which shows that negative violations of general expectations, like those relating to outside support and parenting satisfaction, are linked to declines in relationship satisfaction (Mitnick et al., 2022; Powell & Karraker, 2019; Ranta et al., 2022; Riggs et al., 2018). Relationship satisfaction is thought to probably be most influenced by one's expectations of their spouse (Mitnick et al., 2009).

In the literature on expectations, researchers have found that discrepancies between expectations and experiences may be processed cognitively differently, affecting distal outcomes like satisfaction (Mitnick et al., 2022). Relationship satisfaction may be influenced by the way a person responds or processes the expectation violation. Studies on prenatal expectations have predominantly examined the division of responsibilities within a couple. They have discovered that men who perform fewer household duties than anticipated by their partners are less content in their relationships after giving birth (Powell & Karraker, 2019; Ranta et al., 2022). However, a more thorough understanding of partner expectations, which could provide a deeper understanding of the key mechanisms of partner expectations that influence the transition to parenthood (such as perceptions about the partner's parenting role competence), has not been widely explored (Mitnick et al., 2022).

Ranta and colleagues (2022) attempted to bridge some of that gap by conducting a qualitative study that collected semi-structured interview data on parents transitioning to parenthood (prenatal through 1.5 years after the child's birth). Specifically, Ranta et al. (2022) evaluated the types of prenatal expectations in parents transitioning to parenthood and found five themes of co-parenting for expectant mothers and fathers: division of labor responsibilities, managing family dynamics, childrearing agreements, co-parenting support, and learning and developing through the transition (Ranta et al., 2022). Specifically, this last theme related to expectations of learning and developing one's parenting role over time extended previous models of relationship expectations. It's important to note that this study was conducted on very educated, primarily white couples. Therefore this model should be replicated, and the data should be interpreted with caution before generalizing to other populations.

Perception of the Expectation Violation

Perceptual confirmation likely plays a role, which is the tendency for expectations about a person or interaction to bias subsequent evaluations toward expectation-consistent results (Fiske & Taylor, 2021; Snyder et al., 1977 as cited by Hamilton, 2005). It has been shown that simply being aware of an expectation can cause a person to selectively pay attention to, interpret, or remember the behavior of the target in a way that fits with the expectation (Hamilton, 2005). Despite strong disconfirming evidence, perceived confirmational biases remain overall. Bühler et al. (2021) found that, regardless of objective behaviors observed during a couple's interaction, a partner's expectations about a future interaction were a stronger predictor of their appraisal of that interaction. Therefore, due to perceptual confirmation biases, some new parents may rely on their

expectations rather than their actual experiences to evaluate their own and their partner's behaviors. Related, young couples, in particular, may experience more expectation violations (compared to older couples), as their actual romantic relationship may fall short of their expectations (Bühler et al. 2021).

Attributions About Expectation Violation

Another related cognitive process that has been explored in predicting relationship satisfaction from expectancy violations is attributions. Attributions are the reasons individuals provide for an outcome (successes or failures) that can be applied to oneself or others (Fiske & Taylor, 2021). Hostile attributions are explanations that focus on internal, stable, and controllable causes of behavior (Fiske & Taylor, 2021). Thus, parents' dysfunctional attributions view their partner or child as to blame for misbehavior, which is seen as volitional and intentional. Benign attributions, on the other hand, attribute misbehavior to external, transient, and uncontrollable influences (Fiske & Taylor, 2021). The spouse or child is viewed as not being at fault, and misbehavior is seen as inadvertent. Benign attributions about negatively violated expectations during the transition to parenthood have been found to be associated with higher relationship satisfaction (Mitnick et al., 2022).

On the contrary, hostile attributions concerning one's partner's behavior have been associated with poorer concurrent and long-term relationship satisfaction (Song-Choi & Woodin, 2021). Additionally, when couples had a negative attributional style at the start of their marriage, positive expectations were related to *decreases* in relationship satisfaction (Mitnick et al., 2022). Whereas Bühler et al. (2021) reported that for couples with a positive attributional style at the start of their marriage, positive

expectations were correlated with more stable satisfaction about the relationship.

Further, increased stress and trait hostility are positively associated with hostile attributions toward one's partner and infant (Song-Choi & Woodin, 2021). Hostile attributions are thought to mediate the relationship between increased perceived stress and poorer relationship satisfaction, a poorer parent-child relationship bond, and more presence of psychological aggression after the birth of the child (Mitnick et al., 2022; Song-Choi & Woodin, 2021). Notably, perceived difficult child temperament appears to exacerbate the presence of poorer relationship adjustment, psychological aggression, and hostile attributions (Song-Choi & Woodin, 2021) in heterosexual couples who participated in a two-year longitudinal study through the transition to parenthood and beyond.

Impact of Social Support on Expectations

Stress, uncertainty, and change are common during the transition to parenthood, leaving parents susceptible to feelings of social isolation (Haslam et al., 2017). Lévesque et al. (2020) conducted interviews with new parents and identified three central challenges: (1) loss of one's sense of self, (2) challenges related to the distribution of labor as new parents, and (3) managing expectations due to social norms. Specifically new mothers and fathers both expressed these difficulties; however, it was noted that new mothers felt the strain of distribution of labor more taxing and burdensome than new fathers (Lévesque et al., 2020). Additionally, some of these challenges seem to arise due to a lack of reassurance and guidance during this pivotal transitional period (McLeish et al., 2020).

Most typically, family, friends, and medical professionals have provided new parents with guidance and support (Moon et al., 2019). McLeish and colleagues (2020) found that, for new mothers, the transition to parenthood could be improved by better access to information about postnatal care during the prenatal period. Additionally, healthcare professionals should be sensitive to the needs of first-time mothers when seeking advice and reassurance during postpartum care. Further, a qualitative review by Walker et al. (2019) found that support from midwifery homecare during the postnatal period was beneficial for new mothers. These are important findings because they show a real need for more tailored intervention and education during the prenatal and postnatal process for first-time mothers. It also provides evidence for real versus ideal expectations about postnatal care forming in the prenatal stage (Bäckström et al., 2021).

Impact of Social Media on Expectations

As noted, the experience of becoming a parent can be isolating and lonely (Lévesque et al., 2020). When people are alone, it is natural for them to seek comfort from others. For new parents with no prior experience or who may lack “real life” role models, seeking support, advice, or a parenting model through social media can be effective (e.g., Haslam et al., 2017). The anonymity and accessibility of online interaction are attractive features to new parents (Moon et al., 2019). Indeed, new mothers are more commonly seeking advice and information in the online environment (Baker & Yang, 2018; Gleeson et al., 2019). In an exploratory survey of new mothers, Baker and Yang (2018) reported that nearly all participants (99%) reported using the Internet to answer parenting questions. In an integrative literature review of 23 studies, Gleeson and colleagues (2019) reported that the most common purpose reported by participants for

social media access related to childrearing was information-seeking, with other reasons including convenience, and social connection with other new mothers. While this provides evidence of the benefits of social media use for new mothers during the transition to parenthood, there is also research that suggests there are some potential drawbacks to engaging in such behavior.

For example, according to research, upward social comparison when engaging with others causes negative self-reflection (Amaro et al., 2019; Padoa et al., 2018), decreased self-esteem or psychological issues (Amaro et al., 2019; Padoa et al., 2018), or a skewed view of expectations (Greyson et al., 2019). In particular, Amaro et al. (2019) studied negative emotionality, sense of belonging, parental satisfaction, and social comparison in self-report research of new moms while taking into account their use of social networking sites. On the one hand, online social networks give expectant mothers the chance to receive assistance and easily access information as they adjust to parenting. This could be beneficial because, as stated above, many new mothers report feeling more alone after giving birth (Amaro et al., 2019; Haslam et al., 2017). On the other hand, participating in these types of websites can have unintended consequences when comparing oneself to others or trying to meet unrealistic expectations (Amaro et al., 2019). In fact, in line with the predictions, the researchers discovered that only new mothers who used social networking sites to engage in downward social comparison reported better parental satisfaction. This is understandable, given that self-improvement drives negative social comparison (Festinger, 1954; cited by Amaro et al., 2019). Young moms who engaged in upward social comparison, on the other hand, reported little or no parental satisfaction. Even more concerning, research reveals that individuals—and new

mothers in particular—are significantly more likely to engage in upward than downward social comparisons on these social networking sites because they frequently share happy experiences as a "highlight-reel" for their parenting (Amaro et al., 2019).

Finally, Amaro et al. (2019) investigated the mediating effects of a sense of belonging and negative emotion when using these websites on parental satisfaction and social comparison. They specifically predicted that young mothers who engaged in downward social comparison would also report higher levels of affiliation, that these levels would be linked to higher levels of parental satisfaction, and that lower levels of negative emotion would be positively correlated with parental satisfaction. A model-fit examination of direct and indirect impacts showed that all assumptions were supported (Amaro et al., 2019).

The Portrayal of Parents in Digital Media and Parental Expectations

Beyond the self-reflection related to engaging in social comparison while engaging in social media, it is also important to recognize how new parents are depicted in general media and how that may shape people's general expectations. Individuals naturally engage in self and relationship social comparison (Morry & Sucharyna, 2019) for both real (e.g., "in person") and observed (e.g., "digital") relationships. Meta-analysis reveals that individuals are more prone to engage in upward social comparison than downward social comparison (Gerber et al., 2018). Doing so leads to a deflated perceived ability to complete a task (Gerber et al., 2018), increased negative affect and emotionality (Gerber et al., 2018; Morry & Sucharyna, 2019), and poorer relationship adjustment and life satisfaction (Morry & Sucharyna, 2019). Specifically, new parents report difficulty managing expectations due to social norms (Lévesque et al., 2020).

A mixed-methods longitudinal study was carried out by Greyson et al. (2019) to investigate young parents' perceptions of and experiences with the reality TV portrayal of parenthood. The researchers also looked at how stigma related to being a young parent was perceived. Greyson et al. (2019) gathered information from 112 young mothers and fathers via interviews and observational data. Every four to six months, follow-up interviews with participants were conducted.

The young parents in this study identified a negative stigma displayed on reality television when it depicted teenage pregnancy and parenthood, according to qualitative data from the interviews (Greyson et al., 2019). Overall, the findings imply that seeing these kinds of reality shows may impact the public's perceptions and expectations of specific groups' normative conduct. Many participants claimed to have experienced social exclusion or to have encountered unjust stereotypes in various contexts (Greyson et al., 2019). Young parents face an additional uphill battle when coping with unrealistic or unfair perceptions of others in their everyday lives, making them even more vulnerable to the stressors associated with the transition to parenthood (such as financial burdens, low educational levels, and a lack of social support).

In a separate study, Zurcher et al. (2020) coded and analyzed 85 Disney animated films to assess the portrayal of parents and parenting practices in media between 1937 – 2017. The coding of movies indicated that Disney's portrayal of parents was identified as mature and competent, and more than half used an authoritative parenting style (Zurcher et al., 2020). Gender differences in parenting were also reported in that the authoritarian and permissive parenting styles were more likely to be portrayed by male caregivers, and mothers were more likely to exhibit the authoritative parenting style (Zurcher et al.,

2020). Further, a qualitative study by Scharrer et al. (2021) found that fathers were more often depicted in humorous parenting roles or were the “butt of a joke” rather than displayed in more serious parenting roles in the 34 U.S. sitcoms analyzed for this study. Sitcoms analyzed originally aired between 1980-2017 and, despite an increase in stay-at-home fathers and per-week increase in childcare by fathers, it appears that television depiction has not evolved to reflect this increasing paternal involvement in heterosexual couples that has been evidenced over the last few decades (Scharrer et al., 2021).

Collectively these studies indicate that the portrayal of parents in television and film is often skewed and does not necessarily correspond with everyday couples’ parenting experiences. Nevertheless, exposure to these parenting behaviors can influence an individual’s perceptions and expectations of normative parenting roles through social learning and social comparison. New parents appear to be particularly vulnerable to these social influences, as they often seek informational and social support through personal and digital connections.

Biblical Foundations of the Study

When we examine Scripture for answers about human judgment during a transitional time, we can find many examples and passages that relate to this phenomenon. We can turn to Matthew 7:1-5 (*New International Bible*, 1978/2011) for one example:

Do not judge, or you too will be judged. For in the same way you judge others, you will be judged, and with the measure you use, it will be measured to you.

Why do you look at the speck of sawdust in your brother’s eye and pay no attention to the plank in your own eye? How can you say to your brother, ‘Let me

take the speck out of your eye,' when all the time there is a plank in your own eye? You hypocrite, first take the plank out of your own eye, and then you will see clearly to remove the speck from your brother's eye.

Here, we learn not to judge, to not take offense by another person's actions, and not to think of oneself as superior to the other. If we quickly judge others, we will likely receive that same judgment back. In the above passage, we can view the example of a speck of sawdust as similar to salience – we notice something unusual even at the blatant neglect of our own situation (e.g., a plank in one's eye). Instead of criticizing others, we learn from Jesus to self-examine. One way to grow in righteousness is to shift one's focus from "fixing" others to dealing with our personal issues instead (e.g., take the plank out of one's eye before judging the speck of dirt in someone else's, which will help achieve clarity and focus). As couples transition to their new parenting roles, it's important to exercise patience and kindness with one another. However, as we see in this Scripture passage, it can be difficult not to pass judgment on one's partner, potentially eroding marital satisfaction in the short term, especially when dealing with sleep deprivation and expectations adjusting to new parental roles.

Research by Mahoney et al. (2021) found that husbands and wives who reported greater spiritual intimacy also reported less marital conflict and more collaborative communication during this transitional period. Similarly, Padgett et al. (2019) found that spiritual intimacy positively predicted higher observed intimacy skills in both husbands and wives during a videotaped conversation about one's fears and vulnerabilities related to becoming a parent.

Additionally, we are reminded to seek validation and purpose from the Lord. When we compare ourselves to other men, we open ourselves up to being vulnerable. This corresponds with Scripture, for example, “Am I now trying to win the approval of human beings, or of God? Or am I trying to please people? If I were still trying to please people, I would not be a servant of Christ” (*New International Bible*, 1978/2011, Galatians 1:10). As the research above suggests, our parenting expectations are shaped by social norms, social comparison, and depictions of other parents through social and digital media. However, grounding new parents in Scripture may be fruitful in developing and maintaining realistic parenting expectations.

As mentioned above, the transition to parenthood can feel isolating and lonely for new parents (Coyne et al., 2022; Haslam et al., 2017). Humans often naturally seek comfort from others (Gleeson et al., 2019; Holiday et al., 2022), including their partners, friends, healthcare providers (McLeish et al., 2020), and via social media (McDaniel, 2019; Moon et al., 2019; Turgut et al., 2021) during this time. In fact, Scripture guides us to establish meaningful connections with others:

Two are better than one, because they have a good return for their labor: If either of them falls down, one can help the other up. But pity anyone who falls and has no one to help them up. Also, if two lie down together, they will keep warm. But how can one keep warm alone? Though one may be overpowered, two can defend themselves. A cord of three strands is not quickly broken. (*New International Bible*, 1978/2011, Ecclesiastes 4:9-12)

Research on couples’ religiosity and parenting supports a positive association between engaging in religious practice and subjective well-being (Browne et al., 2022). Martins

and Gall (2021) found mixed results in the relationship between new mothers' spirituality and feelings of depression and anxiety during the postpartum period. Mothers who reported higher levels of spirituality emphasized this relationship in finding meaning in their roles as new mothers. However, feelings of depression and anxiety were severe for some mothers, regardless of reported spirituality.

Summary

This literature review provides a foundation for the current state of the research related to infertility, mental health, and relationship satisfaction during the transition to parenthood. Prior research has established that the transition to parenthood is a pivotal time for couples in general, marked by the uncertainty of embarking on new parenting and family roles. Many couples experience a decline in relationship satisfaction and an increase in depression and anxiety symptoms in the first year postpartum. Additionally, when one's prenatal expectations are unmet in the postpartum period, it tends to exacerbate these findings. While the research has been fairly well-established in these areas, the role of infertility has not been as extensively explored. As noted in this literature review, research findings in studies that have examined the transition to parenthood in couples experiencing infertility are best described as producing mixed results. Further, Scripture provides guidance for individuals going through transitional periods, particularly related to reserving judgment and the importance of establishing meaningful connections. Research related to the role of couples' spirituality and religiosity appears to buffer against postpartum marital conflict; however, the role of spirituality on postpartum mental health symptoms is somewhat mixed. This study sought

to better understand if and how couples' infertility affects the relationship between mental health, expectations, and marital satisfaction during the postpartum period.

CHAPTER 3: RESEARCH METHOD

Overview

The purpose of this quasi-experimental quantitative study was to examine how infertility impacts parenting expectations, psychological distress, and relationship satisfaction for new parents during their transition to parenthood. This chapter provides a review of the research questions and hypotheses, research design, participants and recruitment process, study procedures, data collection and analysis, and the limitations of the study.

Research Questions and Hypotheses

Research Questions

RQ1: How do heterosexual couples who experienced infertility differ in relationship satisfaction from those who spontaneously conceived during the transition to parenthood?

RQ 2: What is the association between parenting expectations and relationship satisfaction for heterosexual couples during their transition to parenthood?

RQ 3: What is the association between psychological distress and relationship satisfaction for heterosexual couples during their transition to parenthood?

RQ 4: Do parenting expectations mediate the association between the method of conception and relationship satisfaction during the transition to parenthood?

RQ 5: Does psychological distress mediate the association between the method of conception and relationship satisfaction during the transition to parenthood?

Hypotheses

Hypothesis 1: Couples with a history of infertility will report significantly poorer relationship satisfaction compared to couples who spontaneously conceived during the postpartum period.

Hypothesis 2: Unrealistic parenting expectations (as reflected by higher scores on the Perception of Parenting Inventory) will be negatively correlated with relationship satisfaction in the postpartum period.

Hypothesis 3: Psychological distress will be negatively correlated with relationship satisfaction in the postpartum period.

Hypothesis 4: Unrealistic parenting expectations (as reflected by higher scores on the Perception of Parenting Inventory) will mediate the association between the method of conception and relationship satisfaction in the postpartum period.

Hypothesis 5: Psychological distress will mediate the association between the method of conception and relationship satisfaction in the postpartum period.

Research Design

This study used a quasi-experimental quantitative research design. A quasi-experimental design allows for between-group comparisons for conditions in which it would be unethical to conduct an experiment and has been shown to be more generalizable than some experimental studies (Siedlecki, 2020). Because the method of conception (assisted reproductive technology versus spontaneous) cannot be randomized, a quasi-experimental design is a good fit for this study. Previous research on the transition to parenthood has established patterns related to relationship satisfaction and mental health concerns; however, most of these studies have not considered how the method of conception may impact these general patterns. Further, the research on

infertility has primarily focused on how couples cope with assisted reproductive technology (ART) to become pregnant and very few have studied these couples through the transition to parenthood. Moreover, many studies that have included couples with a history of infertility have been qualitative (namely, individual interviews) to better understand and establish the specific needs and experiences of this population. Therefore, this quasi-experimental design aims to compare two groups of new parents (those who conceived spontaneously versus those who conceived through ART) to examine if and how infertility impacts relationship satisfaction, psychological distress, and parenting expectations during this transition.

Participants

This study recruited 100 first-time English-speaking parents who were at least 18 years old. The researcher made every attempt to recruit 50 individuals who experienced infertility and used ART to conceive and 50 individuals who spontaneously conceived. Power analysis conducted in SPSS v.28 indicated that including 74 individuals in this study would adequately (power = 0.90) detect a significance value of 0.05 (See Table 1). Eligible participants identified as being in a heterosexual relationship and married or living together for at least one year. Additionally, to qualify for the study, new parents needed to participate within the first six months following childbirth. This time frame was chosen because it is a typical time point used in transition to parenthood studies. It is thought to be short enough after the baby is born to capture transition processes, but long enough to observe the effect of this transition on relationship satisfaction (Mitnick et al., 2022). Participants were recruited via social media pregnancy, infertility, and parenting

support groups (See Appendix A). Permission was requested and granted through Facebook group administrators before posting to recruit for this study.

Table 1

Power Analysis

Power Analysis – Linear Regression

	N	Actual Power ^b	Predictors		Test Assumptions		
			Total	Test	Power	Partial ^c	Sig.
Type III F-test ^a	74	.904	2	2	.9	.4	.05

a. Intercept term is included.

b. Predictors are assumed to be random.

c. Multiple partial correlation coefficient.

Study Procedures

As noted above, participants were recruited via Facebook social media support groups designed for couples who were expecting a child, couples who experienced infertility, and parents. Three support groups were identified for initial recruitment: “Fertility Warriors Support Group of NY” ($N = 3,617$ members), “Wives and Mothers of Long Island” ($N = 11,601$ members), and “One Parent to Another” ($N = 13,454$ members). Recruitment continued until 100 eligible participants (50 who used ART and 50 who spontaneously conceived and who gave birth to their first child in the last 6 months) completed all study questionnaires. Participants first received written instructions and an information sheet (See Appendix B) and then completed a survey of their experiences during their early postnatal period. Specifically, participants first completed a screening questionnaire (See Appendix C) and, if qualified to participate, then completed a short demographic questionnaire (e.g., age, education, income, race,

ethnicity) and method of conception question (See Appendix D). Lastly, participants completed the Couples Satisfaction Index (See Appendix E), Edinburgh Postnatal Depression Scale (See Appendix F), Postpartum Specific Anxiety Scale-Short Form (See Appendix G), and Perceptions of Parenting Inventory scales (See Appendix H). The estimated time to complete all questionnaires was about 15 minutes. All survey data was kept anonymous and collected via Qualtrics. Recruitment materials and permissions were approved by Liberty University IRB (See Appendix I).

Instrumentation and Measurement

Measures

Couple Satisfaction Index-16 (Funk & Rogge, 2007). The CSI-16 is a 16-item measure that assesses relationship satisfaction. Items are rated on several scales: 1 global item is rated on a 7-point scale ranging from 0 (*extremely unhappy*) to 6 (*perfect*), 1 item is rated on a 6-point scale ranging from 0 (*never*) to 5 (*all the time*), 4 items are rated on a 6-point scale ranging from 0 (*not at all true*) to 5 (*completely true*), and 4 items are rated on a 6-point scale ranging from 0 (*not at all*) to 5 (*completely*). In addition, 6 items are rated using a semantic differential format, in which respondents rate their relationship on a series of adjective pairs. The scale is scored such that higher values represent more positive ratings of relationship satisfaction (range = 0-81). The CSI scales show strong convergent validity with measures of relationship satisfaction and are strongly associated with scales that measure conflict, communication, and perceived stress. The CSI-16 has been shown to demonstrate excellent internal consistency ($\alpha = 0.98$; Funk & Rogge, 2017). In this sample the internal consistency was excellent ($\alpha = 0.97$).

Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987). This 10-item measure was designed to assess depressive symptoms in women postpartum in the past 7

days. The EDPS is the most frequently validated screening instrument for perinatal depression and is widely considered the ‘gold standard’ assessment in postpartum (Hewitt et al., 2010; Smith-Nielsen et al., 2018). Items (e.g., I have been able to laugh and see the funny side of things) are rated on a 4-point scale (e.g., 0 = ‘As much as I always could,’ 1 = ‘Not quite so much now,’ 2 = ‘Definitely not so much now,’ 3 = ‘Not at all’), and summed such that higher scores indicate the presence of more depressive symptoms (range = 0-30). This measure has been validated for use in both women and men (Matthey et al., 2001). The EDPS has been shown to demonstrate good internal consistency ($\alpha = 0.82$; Mitnick et al., 2022). In this sample the internal consistency was excellent ($\alpha = 0.91$).

Postpartum Specific Anxiety Scale-Short Form (PSAS-RSF; Davies et al., 2021). The PSAS-RSF is a 16-item measure designed to assess postpartum anxieties experienced in the past seven days. Items are related to psychosocial adjustment to new parenting, anxiety related to infant care, parenting competence and attachment anxiety, and infant safety and welfare. Items are scored between 0 = ‘not at all’ to 3 = ‘almost always,’ with higher scores endorsing more anxiety. The PSAS-RSF has demonstrated good reliability (McDonald’s $\omega = .88$; Davies et al., 2021). In this sample the internal consistency was excellent ($\alpha = 0.96$).

Parenting Expectations. The Perceptions of Parenting Inventory (POPI; Lawson, 2004) is a 27-item questionnaire that measures the perceptions and expectations of parenting. This questionnaire contains six subscales related to parenting perceptions: enrichment, isolation, commitment, instrumental costs, continuity, and perceived support. Items are scored on a 7-point Likert scale from 1 = ‘strongly disagree’ to 7 = ‘strongly

agree.’ Higher scores reflect more unrealistic expectations. The POPI has been shown to demonstrate good internal consistency ($\alpha = 0.85$; Lawson, 2024). In this sample the internal consistency was excellent ($\alpha = 0.92$).

Operationalization of Variables

Method of Conception – this variable is categorical and was measured by the participant’s self-identification to group (ART vs. spontaneous conception) on the demographic questionnaire.

Relationship Satisfaction – Relationship satisfaction is a continuous variable that was measured by the total score on the CSI-16 (Funk & Rogge, 2007). Higher scores indicate better relationship satisfaction.

Psychological Distress – Psychological distress is a continuous variable that was measured by summing the total scores on the EPDS (Cox et al., 1987) and PSAS-RSF (Davies et al., 2021) measures. Higher scores indicate endorsement of more postpartum depression and anxiety symptoms (greater psychological distress).

Parenting Expectations – Parenting expectations is a continuous variable measured by the total score on the POPI (Lawson, 2004). Higher scores reflect more unrealistic parenting expectations.

Data Analysis

To answer RQ1, a between-groups *t*-test was conducted to examine if there are significant differences in relationship satisfaction between couples who spontaneously conceived and those who used ART. To answer RQs 2 and 3 (associations between parenting expectations and relationship satisfaction, and psychological distress and relationship satisfaction), Pearson correlations were conducted. To answer RQs 4 and 5

(do parenting expectations and psychological distress mediate the relationship between method of conception and relationship satisfaction), mediation analyses via multiple linear regression were conducted.

Delimitations, Assumptions, and Limitations

One delimitation of this study is that it only included heterosexual couples who speak English and who are in the first six months postpartum. Heterosexual couples are only included in this study for a few reasons. First, most of the current research on the transition to parenthood has been conducted on heterosexual couples; thus, this study aligns with those procedures, and the current study hypotheses are based on those findings as the next logical step. Second, because this study focused on couples' infertility, the reasons for heterosexual and same-sex couples to engage in ART are often for different purposes (Meads et al., 2021). Further, same-sex couples cannot conceive spontaneously. The decision to collect data within six months postpartum is aligned with previous transition to parenting studies and is thought to be short enough after the baby is born to capture transition processes, but long enough to observe the effect of this transition on relationship satisfaction (Allan et al., 2021b; Hjelmstedt et al., 2004; Mitnick et al., 2022).

Due to the delimitations listed above, the results of this study cannot be generalized to same-sex couples or parents who identify through other means (e.g., adoption, foster). Further, another limitation of this study was that only survey data was collected. Surveys rely on individuals to accurately answer questions. In this study participants needed to report their psychological distress, parenting expectations, and relationship satisfaction. As such, participant response bias may have affected the

accuracy of the data. A common weakness in survey accuracy is the tendency for participants to endorse socially desirable answers to uphold a positive image. That said, it is assumed that participants answered questions honestly due to the anonymous nature of data collection. Lastly, another limitation was that there was only one data collection time point. Therefore, due to the study design, it is impossible to know if there are longer-term effects of the method of conception on relationship satisfaction.

Summary

This quasi-experimental quantitative study aimed to collect survey data through targeted recruitment via social media groups dedicated to parenting and infertility. The study was the next logical step in research in this area, and the inclusion/exclusion criteria are justified based on prior studies examining the transition to parenthood. Ethical considerations included ensuring that there was no risk of harm, employing informed consent as a requirement for participation, and anonymity to avoid the need for the protection of private or confidential data. Demographics of the sample, descriptives of all measures, the statistical tests used, and the results related to each hypothesis of this study will be presented in the next chapter.

CHAPTER 4: RESULTS

Overview

The purpose of this quasi-experimental quantitative study was to examine parenting expectations, psychological distress, and relationship satisfaction for new parents during their transition to parenthood. Further, the impact of a couple's history of infertility on these main study variables was explored. Participants were recruited through three social media support groups. Those who qualified based on inclusion criteria completed a series of questionnaires related to demographics, relationship satisfaction, postpartum anxiety, postpartum depression, and parenting expectations. Data was collected via the Qualtrics survey platform. This chapter will present a summary of study participants and measures used as well as the research findings for each of the five research questions listed below.

Research Questions

RQ1: How do heterosexual couples who experienced infertility differ in relationship satisfaction from those who spontaneously conceived during the transition to parenthood?

RQ 2: What is the association between parenting expectations and relationship satisfaction for heterosexual couples during their transition to parenthood?

RQ 3: What is the association between psychological distress and relationship satisfaction for heterosexual couples during their transition to parenthood?

RQ 4: Do parenting expectations mediate the association between the method of conception and relationship satisfaction during the transition to parenthood?

RQ 5: Does psychological distress mediate the association between the method of conception and relationship satisfaction during the transition to parenthood?

Descriptive Results

A total of 142 individuals accessed the survey link through social media recruitment in one of three targeted support groups: “Fertility Warriors Support Group of NY”, “Wives and Mothers of Long Island”, and “One Parent to Another.” Upon examination of the data, 41 individuals did not meet inclusion criteria and 1 participant did not complete the questionnaire to the end and therefore was excluded from data analysis.

The final participant sample included 100 first-time parents ($n = 98$ females and $n = 2$ males) who reported being married ($n = 78$) or living together for at least a year ($n = 22$), and who had a baby in the last six months participated in this study (See Tables 2 and 3). The average age of participants was 33.51 years ($SD = 5.68$). Participants reported, on average, being in their current relationship for 6.21 years ($SD = 2.81$). Infants were reported to be, on average, 14.15 weeks old at the time of participation ($SD = 5.50$), with a range of 3 to 25 weeks old (See Table 4). As indicated in Table 5, participants identified as the following race: White ($n = 57$), Hispanic ($n = 13$), Black or African American ($n = 12$), Asian ($n = 10$), and Other ($n = 8$). Consistent with recruitment goals, 50 participants identified as spontaneously conceiving their infant, and the other 50 participants identified as using assisted reproductive technology (ART) to conceive their infant (See Table 6).

Table 2***Participants' Gender Identification****Gender*

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	2	2.0	2.0	2.0
Female	98	98.0	98.0	100.0
Total	100	100.0	100.0	

Table 3***Participants' Relationship Status****Relationship Status*

	Frequency	Percent	Valid Percent	Cumulative Percent
In a Relationship	22	22.0	22.0	22.0
Married	78	78.0	78.0	100.0
Total	100	100.0	100.0	

Table 4***Participants' Age, Relationship Length, and Age of Infant****Participants' Age, Relationship Length, and Age of Infant*

	N	Minimum	Maximum	Mean	Std. Deviation
Participants' Age	100	20	42	33.51	5.676
Relationship Length (Years)	100	2	17	6.21	2.808
Age of Infant (Weeks)	100	3	25	14.15	5.504

Table 5***Participants' Racial Identification****Race*

	Frequency	Percent	Valid Percent	Cumulative Percent
White	57	57.0	57.0	57.0
Black or African American	12	12.0	12.0	69.0
Hispanic	13	13.0	13.0	82.0
Asian	10	10.0	10.0	92.0
Other	8	8.0	8.0	100.0
Total	100	100.0	100.0	

Table 6***Participants' Method of Conception****Method of Conception*

	Frequency	Percent	Valid Percent	Cumulative Percent
Spontaneous Conception	50	50.0	50.0	50.0
ART	50	50.0	50.0	100.0
Total	100	100.0	100.0	

The means and standard deviations of the main study variables are provided in Table 7. Overall, participants reported being “happy” in their relationship ($M = 58.8$; $SD = 14.00$). Upon examination of normality, the sample is slightly negatively skewed (-0.33) for relationship satisfaction, but within normal limits. Further, in this sample, the internal consistency of the CSI-16 was excellent ($\alpha = 0.91$). Participants, overall, reported mild symptoms of psychological distress ($M = 21.22$; $SD = 16.61$). Psychological distress was calculated by summing participants’ scores on the EDPS and the PSAS-RSF. Upon examination of normality, the sample is slightly positively skewed (0.63), but within

normal limits. In this sample, the internal consistency of the EDPS ($\alpha = 0.91$) and PSAS-RSF were both excellent ($\alpha = 0.96$). Lastly, participants, overall, reported parenting expectations that were considered, slightly unrealistic ($M = 116.27$; $SD = 23.44$), and the responses were normally distributed (skew = 0.10). In this sample, the internal consistency of the POPI was also excellent ($\alpha = 0.92$).

Table 7

Descriptives of Main Study Variables

Descriptives of Main Study Variables

	N	Minimum	Maximum	Mean	Std. Deviation
Relationship Satisfaction	100	23.00	81.00	58.8000	14.00216
Postpartum Depression	100	0	18	4.44	5.088
Postpartum Anxiety	100	0	44	16.78	12.255
Parenting Expectations	100	50.00	171.00	116.2700	23.44383
Psychological Distress	100	.00	60.00	21.2200	16.60874

Study Findings

This research study broadly aimed to examine whether a couple's history of infertility impacted the association between relationship satisfaction, psychological distress, and parenting expectations for first-time parents transitioning to parenthood. First, analyses were conducted to examine whether postpartum relationship satisfaction significantly differed between groups (spontaneous conception vs. ART). Next, Pearson's correlations between the main study variables (relationship satisfaction, psychological distress, and parenting expectations) were analyzed. Finally, two mediation analyses were conducted to determine if unrealistic expectations and psychological distress mediated

the relationship between the method of conception and relationship satisfaction. All analyses were conducted using IBM SPSS Statistics v. 28.

Research Question 1: Do Couples Who Used ART vs. Couples Who Spontaneously Conceived Report Different Levels of Relationship Satisfaction in the Postpartum Period?

It was hypothesized that couples with a history of infertility would report significantly poorer relationship satisfaction compared to couples who spontaneously conceived during the postpartum period. To test this hypothesis, a between-groups *t*-test was performed. Individuals who spontaneously conceived reported significantly lower relationship satisfaction ($M = 55$; $SD = 14.38$), on average, than those who conceived via ART ($M = 62.60$; $SD = 12.64$), $t(98) = -2.807$, $p = 0.006$ (See Table 8). Interestingly, while these groups significantly differed, it was in the opposite direction than the study hypothesis.

Table 8
Relationship Satisfaction by Method of Conception

Relationship Satisfaction by Method of Conception

	Method of Conception	N	Mean	Std. Deviation	Std. Error Mean
Relationship Satisfaction	Spontaneous Conception	50	55.0000	14.38111	2.03380
	ART	50	62.6000	12.64266	1.78794

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
Relationship Satisfaction	Equal variances assumed	.427	.515	-2.807	98	.003	.006	-7.60000	2.70796	-12.97386	-2.22614
	Equal variances not assumed			-2.807	96.417	.003	.006	-7.60000	2.70796	-12.97497	-2.22503

Research Questions 2 and 3: What is the Association Between Parenting Expectations, Psychological Distress, and Relationship Satisfaction in the Postpartum Period?

It was hypothesized that both unrealistic parenting expectations (H2) and psychological distress (H3) would be negatively correlated with relationship satisfaction in the postpartum period. To identify associations between parenting expectations, relationship satisfaction, and psychological distress, Pearson's correlations were conducted. Consistent with hypotheses, both unrealistic parenting expectations ($r = -0.592$; $p < .001$) and psychological distress ($r = -0.361$; $p < .001$) were significantly, negatively correlated with relationship satisfaction (See Table 9). Both individuals who reported more unrealistic parenting expectations and those who reported more symptoms of psychological distress reported poorer relationship satisfaction in the postpartum period.

Table 9
Correlations of Main Study Variables

Correlations of Main Study Variables

		Psychological Distress	Relationship Satisfaction	Parenting Expectations
Psychological Distress	Pearson Correlation	1	-.361**	.435**
	Sig. (2-tailed)		<.001	<.001
	N	100	100	100
Relationship Satisfaction	Pearson Correlation	-.361**	1	-.592**
	Sig. (2-tailed)	<.001		<.001
	N	100	100	100
Parenting Expectations	Pearson Correlation	.435**	-.592**	1
	Sig. (2-tailed)	<.001	<.001	
	N	100	100	100

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

Research Question 4: Do Parenting Expectations Mediate the Association Between the Method of Conception and Relationship Satisfaction During the Transition to Parenthood?

It was hypothesized that unrealistic parenting expectations would mediate the association between the method of conception and relationship satisfaction. To test this hypothesis linear regression was conducted. It was found that there was a statistically significant direct effect of the method of conception on relationship satisfaction, $b = 6.68$, $t = 3.06$, CI [2.13, 10.65], $p = .003$ (See Table 10). As noted above, individuals who reported conceiving via ART, compared to those who spontaneously conceived, reported significantly higher relationship satisfaction in the postpartum period. Individuals who spontaneously conceived reported, on average, more unrealistic parenting expectations than individuals who conceived via ART ($b = 2.66$, $t = 2.66$, CI [0.57, 6.67], $p = 0.566$), though this difference was not significant. A statistically significant indirect effect (between unrealistic parenting expectations and relationship satisfaction) was also found, $b = -0.35$, $t = -7.38$, CI [- 0.43, -0.26], $p < .001$ (See Table 10). Specifically, individuals who reported more unrealistic expectations reported poorer relationship satisfaction.

Upon full examination of the mediation model, individuals who spontaneously conceived reported, on average, more unrealistic parenting expectations than individuals who conceived via ART, and those who reported more unrealistic parenting expectations reported poorer relationship satisfaction. However, the Sobel test of this effect indicated that unrealistic parenting expectations did not fully mediate the relationship between the method of conception and relationship satisfaction, $z = 0.56$, $p = 0.57$. Taken together, these results suggest that unrealistic parenting expectations partially mediated the

relationship between the method of conception and relationship satisfaction. Individuals who conceived via ART, compared to individuals who spontaneously conceived, reported somewhat more realistic parenting expectations; and individuals who reported more realistic parenting expectations also reported significantly higher relationship satisfaction (See Figure 1).

Table 10

Regression Models for Parenting Expectations Partially Mediating the Relationship between Method of Conception and Relationship Satisfaction

Coefficients^a

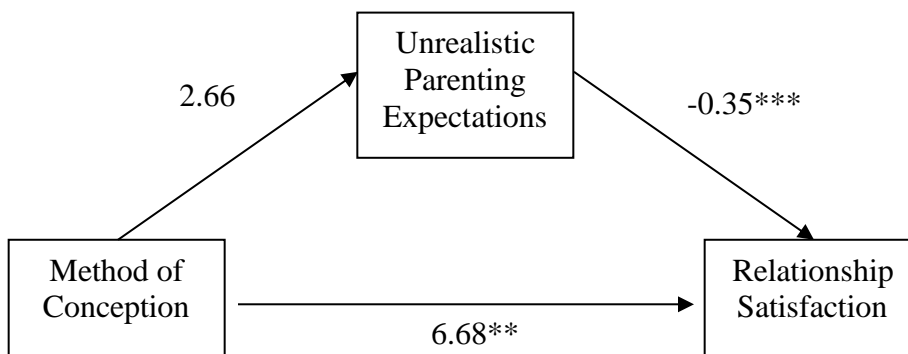
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	47.400	4.282		11.070	<.001
	Method of Conception	7.600	2.708	.273	2.807	.006
2	(Constant)	8.637	6.279		1.376	.172
	Method of Conception	6.682	2.181	.240	3.063	.003
	Parenting Expectations	-.345	.047	-.578	-7.384	<.001

^a Dependent Variable: Relationship Satisfaction

Bootstrap for Coefficients

Model		B	Bias	Std. Error	Sig. (2-tailed)	Bootstrap ^a	
						95% Confidence Interval	
						Lower	Upper
1	(Constant)	47.400	.204	4.254	<.001	38.700	55.579
	Method of Conception	7.600	-.153	2.594	.010	2.635	12.779
2	(Constant)	8.637	.219	5.408	.109	-1.529	20.076
	Method of Conception	6.682	-.124	2.106	<.001	2.132	10.651
	Parenting Expectations	-.345	-8.632E-5	.043	<.001	-.426	-.257

^a Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Figure 1***Unrealistic Parenting Expectations as a Partial Mediator***

Note. * $p < .05$ ** $p < .01$, *** $p < .001$

Research Question 5: Does Psychological Distress Mediate the Association Between the Method of Conception and Relationship Satisfaction During the Transition to Parenthood?

Lastly, it was also hypothesized that psychological distress would mediate the association between the method of conception and relationship satisfaction. To test this hypothesis linear regression was conducted. It was found that there was a statistically significant direct effect of the method of conception on relationship satisfaction, $b = 10.28$, $t = 4.12$, CI [5.64, 14.96], $p < .001$ (See Table 11). As noted previously, individuals who reported conceiving via ART, compared to those who spontaneously conceived, reported significantly higher relationship satisfaction in the postpartum period. Individuals who conceived via ART reported, on average, significantly more symptoms of psychological distress than individuals who spontaneously conceived, $b = 7.20$, $t = 2.71$, CI [2.23, 12.97], $p = 0.006$. A statistically significant indirect effect (between psychological distress and relationship satisfaction) was also found, $b = -0.37$, $t = -4.94$, CI [-0.53, -0.20], $p < .001$ (See Table 11).

Upon full examination of the mediation model, individuals who conceived via ART reported more symptoms of psychological distress than individuals who spontaneously conceived; and individuals who reported more psychological reported poorer relationship satisfaction. A Sobel test of this effect indicated that psychological distress significantly mediated the relationship between the method of conception and relationship satisfaction, $z = 2.02$, $p = 0.04$ (See Figure 2).

Table 11

Regression Models for Psychological Distress Mediating the Relationship between Method of Conception and Relationship Satisfaction

Coefficients^a

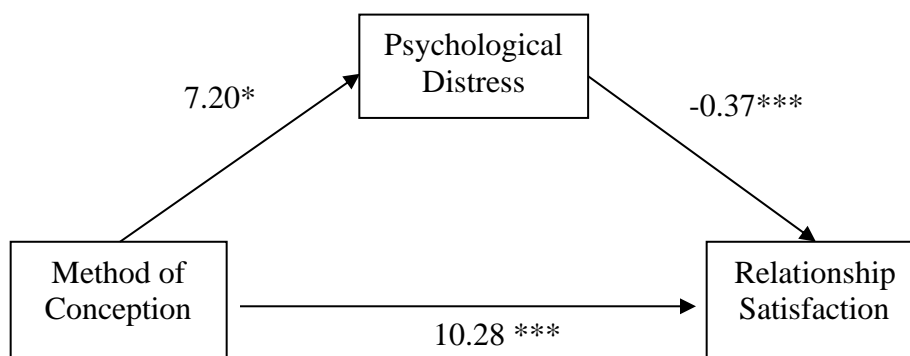
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	47.400	4.282		11.070	<.001
	Method of Conception	7.600	2.708	.273	2.807	.006
2	(Constant)	51.282	3.927		13.060	<.001
	Method of Conception	10.282	2.493	.369	4.124	<.001
	Psychological Distress	-.373	.075	-.442	-4.939	<.001

^a Dependent Variable: Relationship Satisfaction

Bootstrap for Coefficients

Model		B	Bootstrap ^a				
			Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
					Lower	Upper	
1	(Constant)	47.400	-.100	4.286	<.001	39.267	55.794
	Method of Conception	7.600	.069	2.636	.005	2.342	12.766
2	(Constant)	51.282	-.067	3.679	<.001	44.312	58.186
	Method of Conception	10.282	-.010	2.434	<.001	5.644	14.958
	Psychological Distress	-.373	.003	.082	<.001	-.526	-.200

^a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Figure 2***Psychological Distress as a Mediator***

Note. * $p < .05$ ** $p < .01$, *** $p < .001$

Summary

Results indicated that participants who experienced infertility and used ART, compared to those who spontaneously conceived, did report significantly different levels of relationship satisfaction in the postpartum period. Interestingly, the pattern of results was the opposite of what was hypothesized. Meaning, participants who used ART to conceive reported significantly happier relationship satisfaction than those who spontaneously conceived. To further elucidate these group differences, correlational analyses were conducted between the main study variables (relationship satisfaction, parenting expectations, and psychological distress). As hypothesized, relationship satisfaction was negatively correlated with both psychological distress and unrealistic parenting expectations.

These findings provided a basis for the two mediation analyses. Mediation analyses indicated that parenting expectations partially mediated the association between the method of conception and relationship satisfaction. Individuals who conceived via ART also, on average, reported somewhat more realistic parenting expectations

(compared to those who spontaneously conceived), and individuals who reported more realistic parenting expectations reported significantly higher relationship satisfaction. Lastly, psychological distress significantly mediated the effect between the method of conception and relationship satisfaction. Individuals who conceived via ART reported, on average, more symptoms of psychological distress than individuals who spontaneously conceived. Further, those that reported more psychological distress, reported poorer relationship satisfaction. The next chapter will consist of the discussion, which will include an overview, summary, and discussion of findings, implications, limitations, and recommendations for future research.

CHAPTER 5: DISCUSSION

Overview

The transition to parenthood is a significant life event that can have profound effects on individuals' expectations, psychological well-being, and overall relationship satisfaction. The findings from the current study shed light on the complex interplay between the method of conception, parenting expectations, psychological distress, and relationship satisfaction during the postpartum period. This chapter synthesizes these findings in the context of previous research and Biblical foundations, explores their implications, addresses the methodological limitations of the study, and offers recommendations for future research.

Summary of Findings

Research Question 1: Do Couples Who Used ART vs. Couples Who Spontaneously Conceived Report Different Levels of Relationship Satisfaction in the Postpartum Period?

The study first sought to answer how heterosexual couples who experienced infertility differ in relationship satisfaction from those who spontaneously conceived during the transition to parenthood. Contrary to initial hypotheses, individuals who used assisted reproductive technology (ART) to conceive reported significantly higher levels of relationship satisfaction compared to those who conceived spontaneously. This finding challenges assumptions about the impact of infertility and ART on postpartum relationship satisfaction for new mothers and fathers. While prior research in this area produced somewhat mixed results (e.g., Fisher et al., 2008; Klock & Greenfeld, 2000; Roshanaei et al., 2022), the original hypothesis was based on the assumption that the

stressors of navigating infertility treatments would negatively impact relationship satisfaction in the postpartum period. However, the results of the current study indicate that, for these participants, that was not the case. Perhaps the relationship stressors related to infertility diminished once a couple sustained a viable pregnancy. This suggests that a couple's resiliency to navigate ART together may serve to strengthen (e.g., Santona et al., 2023), rather than erode their relationship satisfaction, at least in cases of successful treatment.

Research Questions 2 and 3: What is the Association Between Parenting Expectations, Psychological Distress, and Relationship Satisfaction in the Postpartum Period?

The next aim of this study was to examine the association between psychological distress, parenting expectations, and relationship satisfaction. As expected, correlational analyses revealed negative associations between relationship satisfaction and both psychological distress and unrealistic parenting expectations, highlighting the importance of these factors in shaping the transitional experience of becoming parents.

The findings of this study underscore parenthood as a profound developmental transition, characterized by numerous challenges and adjustments. Consistent with previous research (e.g., Cox et al., 1987; Maehara et al., 2022; Ranjbar et al., 2020; Smorti & Smorti, 2012), participants reported experiencing heightened levels of stress and anxiety during the transition to parenthood. This may be attributed to the increased responsibilities, sleep deprivation, and changes in routine associated with caring for a newborn (e.g., Ranta et al., 2022).

Participants who experienced more unrealistic parenting expectations also reported poorer relationship satisfaction. This finding is also aligned with prior studies (e.g., Mitnick et al., 2022) which found that individuals who reported more unrealistic expectations had more difficulty adjusting to the transition to parenthood. Further, studies such as Amaro and colleagues (2019) provide insight into why this may occur. Specifically, engaging in upward social comparison with others (whether in person or digital environment) can create a skewed perception of “normal” behavior, unrealistic expectations, and poorer self-esteem (Amaro et al., 2019). Because the transition to parenthood forces individuals to adjust to new roles as mothers and fathers it is not surprising that this may cause relationship strain, especially if one perceives his or her partner is falling short of their new parenting roles and new shared responsibilities.

Research Question 4: Do Parenting Expectations Mediate the Association Between the Method of Conception and Relationship Satisfaction During the Transition to Parenthood?

Given that postpartum relationship satisfaction significantly differed based on the method of conception, and that relationship satisfaction was found to be negatively correlated with both unrealistic parenting expectations and psychological distress, these results provided a basis to explore mediation analyses. As expected, mediation analyses further elucidated some mechanisms underlying the differences found between the method of conception and relationship satisfaction. The first mediational analysis in this study explored the role of unrealistic parenting expectations between the method of conception and relationship satisfaction. Specifically, parenting expectations were found to partially mediate this association, with individuals who conceived via ART exhibiting,

on average, more realistic parenting expectations than those who conceived spontaneously. Further, those who reported more unrealistic parenting expectations reported poorer relationship satisfaction.

Even though an infertility diagnosis can be stressful and emotionally taxing for couples, some past research has indicated that going through ART helped to strengthen relationships, particularly in successful outcomes (Maehara et al., 2022). Further, it could be that going through this difficult process and achieving a positive outcome strengthens marital cohesion (Santona et al., 2023) and helps to provide a more positive, and stable, view of one's partner (Fisher et al., 2008) and general parenting expectations. Additionally, ART can feel isolating and lonely for couples; therefore, they may not engage in social comparison via social media, which has been shown to influence unrealistic expectations (Greyson et al., 2019; Kang & Liu, 2019). Further, the results from this study align with prior research that suggests that more unrealistic parenting and partner expectations is related to poorer postpartum relationship satisfaction (Powell & Karraker, 2019; Mitnick et al, 2022). Taken together, unrealistic parenting expectations partially mediating the relationship between the method of conception and relationship satisfaction makes sense given the state of the research. Transition to parenthood research is in the earlier stages when it comes to examining the effects of infertility. The current study results suggest that identifying how couples navigate the infertility diagnosis and successful ART treatments would help identify potential resilient or protective factors that may emerge from these experiences.

Research Question 5: Does Psychological Distress Mediate the Association Between the Method of Conception and Relationship Satisfaction During the Transition to Parenthood?

Finally, this study also sought to examine if psychological distress mediates the relationship between the method of conception and relationship satisfaction. As predicted, psychological distress emerged as a significant mediator, with individuals who conceived via ART reporting higher levels of distress (compared to individuals who conceived spontaneously), which in turn predicted lower relationship satisfaction. The current study results are aligned with previous findings related to increased anxiety and depression related to infertility treatments and pregnancy (Allan et al., 2021a; Sirevičiūtė, & Jarašiūnaitė-Fedosejeva, Smorti & Smorti, 2012; 2022; Warmelink et al., 2023). The results of this study appear to suggest that those symptoms extend to the postpartum period, despite successful ART treatment. Further, consistent with prior research (e.g., Maehara et al., 2022; Ranjbar et al., 2020), higher levels of psychological distress, as predicted, were associated with poorer postpartum relationship satisfaction in this mediation model.

Collectively, while couples who undergo successful ART treatment may build skills that help more closely bond them together and may lay the groundwork for more realistic parenting expectations, they may also suffer from more psychological distress before, during, and after pregnancy and through the transition to parenthood. Overall, in this study, couples who underwent successful ART treatments reported higher postpartum relationship satisfaction than those who spontaneously conceived. Additional discussion and implications of these findings are further delineated below.

Discussion of Findings

Initially, it may appear counterintuitive that couples who conceived via ART reported higher relationship satisfaction postpartum compared to those who conceived spontaneously. However, prior research in this area is mixed, at best, with some studies reporting that couples who conceived via ART reported poorer relationship satisfaction postpartum (Roshanaei et al., 2022), some reported better relationship satisfaction (Fisher et al., 2008), while others reported no significant difference (Klock & Greenfeld, 2000) compared to couples who conceived spontaneously. Upon further examination of the literature, several factors could explain this study's pattern of results.

First, experiencing infertility and engaging in ART is often associated with emotional, financial, and relationship challenges (Hammarberg et al., 2008; Ranjbar et al., 2020; Repokari et al., 2007). Couples undergoing infertility treatment often face significant stressors, including feelings of disappointment, guilt, and doubt regarding their ability to conceive (Gameiro et al., 2012). The couple's shared experience of navigating infertility and treatment may foster a sense of mutual support within the relationship (Maehara et al., 2022; Santona et al., 2023). Couples who undergo ART together often develop a strong bond characterized by open communication, empathy, and shared decision-making, which may provide a solid foundation for better adjustment in the postpartum period (Fisher et al., 2008; Santona et al., 2023).

Second, successful conception via ART treatment is considered a significant milestone for couples who have struggled with infertility. The demanding nature of ART treatments requires couples to demonstrate resilience, adaptability, and teamwork in navigating the challenges of treatment protocols, medical procedures, and emotional ups

and downs (Gameiro & Finnigan, 2017; Smorti & Smorti, 2012; Vioreanu, 2021). The experience of overcoming infertility may strengthen both the confidence in one's relationship to overcome adversity as well as enhance the emotional bond between partners and enhance relationship satisfaction (Peterson et al., 2009). In contrast, couples who conceive spontaneously may not view pregnancy and parenthood with the same level of accomplishment, potentially leading to lower relationship satisfaction in the postpartum period. Specifically, couples who have not endured the stress of infertility may have a more difficult time coping with the natural changes that occur postpartum, such as role strain (Falconier et al., 2015), or may have more unrealistic expectations in adjusting to these changes (e.g., Mitnick et al., 2022). Even more, couples who report their pregnancy is unplanned experience poor postpartum relationship satisfaction (Cox et al., 1999) and couples who are unmarried are more likely to break up postpartum (O'Reilly-Treter et al., 2020).

Third, couples undergoing ART may receive additional support from healthcare professionals, counselors, and support groups throughout the treatment process. These professionals often provide couples with coping strategies and practical guidance, which can buffer against the stressors associated with infertility and treatment (Bäckström et al., 2021). The sense of community and belonging fostered by these professionals and support groups may combat the feelings of loneliness and isolation otherwise reported during this transitional time (e.g., Haslam et al., 2017) and contribute to higher levels of relationship satisfaction among couples who conceived via ART.

Unsurprisingly, as predicted, postpartum relationship satisfaction was negatively associated with both psychological distress and unrealistic parenting expectations. The

transition to parenthood is accompanied by a myriad of stressors and challenges that can take a toll on one's mental health and relationship satisfaction. The demands of caring for a newborn, disrupted sleep patterns, financial strains, and changes in roles and responsibilities can all contribute to heightened levels of psychological distress among new parents (Johansson et al., 2021). As individuals grapple with these stressors, their ability to maintain a strong and positive relationship with their partner may be compromised, leading to decreased relationship satisfaction over time (Cox et al., 1999; Gottman & Notarius, 2000). It is important to note that this association may be bidirectional: High levels of psychological distress may impair an individual's ability to engage effectively in their relationships, leading to decreased communication, emotional withdrawal, and conflict with their partners. Additionally, strained romantic relationships can exacerbate psychological distress by amplifying feelings of loneliness, isolation, and dissatisfaction.

Consistent with prior research, unrealistic parenting expectations can exacerbate the deterioration of relationship satisfaction (Mitnick et al., 2022). Expectations of perfectionism, unrealistic ideals of parenthood, and societal pressures formed by social media can create undue stress and anxiety for new parents (Amaro et al., 2019). When reality falls short of these expectations, individuals may experience feelings of inadequacy, guilt, and self-doubt (Padoa et al., 2018), further exacerbating psychological distress and undermining relationship satisfaction. Unrealistic parenting expectations may serve as a source of conflict and discord within couples' relationships, further contributing to decreased relationship satisfaction (Mitnick et al., 2022).

The results above (that is, differences reported between ART and spontaneous conception couples on relationship satisfaction, and the negative correlation between relationship satisfaction and psychological distress and unrealistic parenting) provided the basis and rationale for mediation analyses. In this study, somewhat consistent with the hypotheses, unrealistic parenting expectations partially mediated the relationship between the method of conception and relationship satisfaction. Upon further examination of the pattern of results, individuals who conceived via ART, compared to individuals who spontaneously conceived, reported somewhat more realistic parenting expectations; and individuals who reported more realistic parenting expectations also reported significantly higher relationship satisfaction. When thinking about this pattern, again, it appears that the taxing nature of ART may, in some ways, better prepare couples for the transition to parenthood. It could be that both facing and overcoming the stress and heartache of infertility provides an anchor of realism to these couples so that when they are faced with the added stressors of parenting, they are better able to realistically predict, adjust, and handle this transition.

Also consistent with the hypothesis, psychological distress mediated the relationship between the method of conception and relationship satisfaction. Couples undergoing infertility treatment often experience heightened levels of anxiety, depression, and emotional distress stemming from the uncertainty, disappointment, and financial burden associated with fertility procedures (Maehara et al., 2022). The daunting, and often lengthy, nature of going through ART may exacerbate psychological distress, leading to greater emotional strain on individuals and their relationships. Prior research has established that the experience of infertility and ART treatments is associated with

feelings of inadequacy, guilt, and self-blame among couples (Smorti & Smorit, 2012; Vioreanu, 2021). The social and societal pressures surrounding infertility and parenthood may compound psychological distress among couples undergoing ART treatments (Gameiro & Finnigan, 2017; Peterson & Place, 2019). These negative emotions can contribute to diminished self-esteem, increased interpersonal conflicts, and a sense of isolation within the relationship, further exacerbating psychological distress and undermining relationship satisfaction (Peterson & Place, 2019).

Taken together, the results of this study suggest that the transition to parenthood can be a difficult time for couples to navigate. While the added history of infertility may appear to exacerbate some issues (i.e., psychological distress), it appears to buffer against others (i.e., unrealistic parenting expectations; relationship satisfaction). Turning to scripture and spiritual intimacy may help guide couples through their transition as new parents. One's relationship with God is mirrored in romantic relationships by way of spiritual and emotional unity (e.g., Rezaei et al., 2020). Higher spiritual intimacy is associated with better problem-solving (Rezaei et al., 2020), less marital conflict (Mahoney et al., 2021), and more open and vulnerable conversations for new parents (Padgett et al., 2019). As new mothers and fathers adapt to their new parenting roles, they often feel isolated from others and, in some cases, unsupported by their partners. Scripture reminds us to establish meaningful connections with others and to lean on others for support in trying times (e.g., *New International Bible*, 1978/2011, Ecclesiastes 4:9-12). Leaning on one's religiosity may help to buffer against increased symptoms of psychological distress in the postpartum period (Browne et al., 2022). This, in turn, may

help couples better navigate the transition to parenthood by helping to preserve relationship satisfaction.

Implications

The findings of this study have several important implications for research and clinical interventions. Interestingly, the first main finding challenges prevailing assumptions about the impact of infertility and ART on relationship satisfaction, suggesting that individuals who conceived via ART may experience greater postpartum relationship satisfaction than those who conceived spontaneously. Clinicians working with couples undergoing infertility treatment should be mindful of this possibility and explore potential sources of resilience and strength within these relationships.

Understanding the factors that contribute to better relationship satisfaction in the postpartum period could inform more effective treatments for couples struggling during the transition to parenthood. For example, by examining couples who report more stable functioning (i.e., less decline in relationship satisfaction) during the transition to parenthood, researchers may be able to isolate factors that predict their success. The results of this study suggest that couples who undergo ART to conceive reported more realistic parenting expectations postpartum. This may be one important factor that buffers a decline in relationship satisfaction postpartum. Therefore, tailoring interventions for new parents to both discuss and aid in developing more realistic parenting expectations may be helpful. Beyond the main variables analyzed in this study, researchers could examine other factors (e.g., age of conception, time to conceive, socioeconomic status, length of relationships) that may predict postpartum relationship satisfaction. Again, a

more detailed understanding of the interplay among these identified variables may help to tailor antepartum and postpartum interventions for new parents.

The negative associations between relationship satisfaction and both psychological distress and unrealistic parenting expectations highlight the importance of addressing these specific factors in clinical interventions aimed at promoting couples' well-being during the transition to parenthood. Previous research identified positive outcomes for new mothers who received postnatal midwife homecare (Walker et al., 2019). Psychoeducational programs, couples therapy, spiritual counselors, and support groups tailored to the unique needs of new parents can be valuable resources that provide strategies for managing psychological distress, fostering realistic expectations, and enhancing communication and problem-solving skills within romantic relationships.

Furthermore, the mediating role of parenting expectations emphasizes the importance of addressing unrealistic expectations during the transition to parenthood. As noted above, interventions aimed at promoting realistic parenting expectations and effective coping strategies may help mitigate the negative impact of unmet expectations on relationship satisfaction. Prior research has identified the need to provide more robust support to parents in both the prenatal and postnatal periods, with evidence that these expectations start to form prenatally (Bäckström et al., 2021). Most of the interventions currently provided focus on the childbirth process and neglect self and relationship care that comes after the child is born (e.g., McLeish et al., 2020). Results of this study support the notion of the importance of extending interventions that target parenting expectations through the postpartum period, as this may be beneficial to buffer against a decline in relationship satisfaction.

Related, the mediation of psychological distress between the method of conception and relationship satisfaction highlights the need for comprehensive support services for individuals undergoing infertility treatment, including access to mental health resources and counseling. While the results of this study indicate that prior infertility buffers against unrealistic parenting expectations, they also indicate that prior infertility may exacerbate postpartum anxiety and depression. Therefore, policies aimed at promoting mental health awareness and destigmatizing infertility may help to create a more supportive environment for couples navigating the challenges of an infertility diagnosis and related treatments. Doing so may positively impact the level of postpartum psychological distress and relationship satisfaction, although a longitudinal study design would need to be completed to fully assess this trajectory and its long-term implications.

Limitations

One limitation of this study is that it only examined the transition to parenthood in heterosexual couples. Findings cannot be generalized to same-sex couples or individuals who identify as parents in other ways (e.g., adoptive parents). Further, most participants (98%) were women, so findings should not be generalized to new fathers. The sole use of survey data in this quantitative study relied on individuals to accurately report their psychological distress, parenting expectations, and relationship satisfaction. As such, participant response bias may have affected the accuracy of the data. That said, it is assumed that participants answered questions honestly. Objective measures of relationship satisfaction and psychological distress, such as observational assessments or physiological indicators, could enhance the validity and reliability of the findings.

Another limitation is that there was only one data collection time point. Therefore, by using this chosen study design it is impossible to know if there are longer-term effects of the method of conception, psychological distress, and parenting expectations on relationship satisfaction. Given the variability in reported psychological distress, parenting expectations, and relationship satisfaction, may have also been useful to ask participants more about their journey to conception (e.g., length of time, history of miscarriages, etc.). Related, asking participants additional questions about perceived social support outside of their romantic partner (e.g., relatives, friends, healthcare workers) may have helped to provide a more comprehensive contextualization of the transition to parenthood. That is, this additional information may have helped to better understand the associations among the method of conception, psychological distress, unrealistic expectations, and relationship satisfaction.

Recommendations for Future Research

Building upon the current findings, future research should explore potential moderators of the relationship between the method of conception and relationship satisfaction. Some variables to consider could be the length of time to conceive, the number of prior miscarriages, socioeconomic status, coping strategies, and perceived social support. Active recruitment of new fathers or both members of the couple to examine dyadic factors could yield important insights to fine-tune our understanding of this transition. In general, recruiting more representative samples (e.g., same-sex couples and adoptive parents) would help to increase the generalizability of study findings. Further, longitudinal studies tracking couples' relationship trajectories from pre-

conception through the postpartum period could provide valuable insights into the dynamic nature of relationship satisfaction during the transition to parenthood.

Additionally, qualitative research methods could offer a deeper understanding of couples' experiences and perceptions surrounding infertility, ART, and the transition to parenthood. By capturing the nuanced experiences of individuals undergoing infertility treatment, qualitative research can complement quantitative findings and provide a richer understanding of the psychological processes at play. In general, studies that use multi-modal data collection techniques (e.g., objective measures of relationship satisfaction and psychological distress, such as observation assessments of physiological measurements) could provide a more detailed summary of this transitional time and possibly strengthen the generalizability of the findings.

While not in the scope of the current study, the impact of secondary infertility on couples as they try to conceive and grow their family could also be an important area of research to both draw on and explore in future studies. Stressors related to parenting while undergoing ART, grappling with potential violations of parenting expectations related to having multiple children, added psychological stressors, and financial strain (to name a few) could be important avenues to explore in this area of research. Further, comparing the experiences of couples undergoing ART for primary versus secondary infertility may elucidate key areas of intervention. Meaning, identifying the similarities and differences these couples experience may better help researchers and clinicians understand more general intervention strategies (e.g., coping with the general stressors of ART) vs. more specific interventions (e.g., identifying childcare and parenting help during ART treatments). The more nuances we can uncover in this transitional period for

couples and families the more we can hopefully aid in building a more stable transition for couples.

Summary

This study's findings highlight important factors that contribute to the transition to parenthood. The pattern of results suggests that both increased psychological distress and unrealistic parenting expectations are associated with poorer relationship satisfaction in the first six months postpartum for new parents. Additionally, couples who underwent ART due to infertility reported stronger relationship satisfaction than those who spontaneously conceived. Prior research related to infertility and postpartum relationship satisfaction area has been mixed. Certainly, replication of study findings is necessary to ascertain both generalizability and confidence in the results.

This quasi-experimental survey study implies that couples transitioning to parenthood need support. Further understanding of the impact of infertility on the transition to parenthood is needed. This study suggests that dealing with infertility may serve as a protective factor for relationship satisfaction, possibly due to more realistic parenting expectations compared to couples who spontaneously conceived. However, this study also uncovered that those who experienced infertility and ART treatments also reported more psychological distress than those who spontaneously conceived. Certainly, this highlights the unique trajectories couples go through during the transition to parenthood. Interventions that are tailored to supporting couples in both the antepartum and postpartum stages, particularly those that help individuals examine parenting

expectations and identify coping strategies related to combating postpartum depression and anxiety would be fruitful.

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APPENDIX A: RECRUITMENT POST

ATTENTION FELLOW GROUP MEMBERS: I am conducting research as part of the requirements for a doctor of philosophy at Liberty University. The purpose of my research is to examine how opposite-sex couples transition to parenthood and how a history of infertility may affect this transition. To participate, you must be 18 years of age or older, identify as being in a heterosexual relationship, be married or living together for at least one year, have had your first child within the last six months, and be able to read and understand English. Participants will be asked to complete an anonymous online survey, which should take about 20 minutes to complete. If you would like to participate and meet the study criteria, please click the link provided at the end of this post. An information sheet is provided on the first page of the survey. Please review this page, and if you agree to participate, click the “proceed to survey” button at the end.

To take the survey, click here:

https://liberty.co1.qualtrics.com/jfe/preview/previewId/ab8af1ad-d7ff-4109-be13-d956b7a5577a/SV_1MrwqKUikDpeRSK?Q_CHL=preview

APPENDIX B: INFORMATION SHEET

Information Sheet

Title of the Project: The Impact of Infertility on Relationship Satisfaction, Mental Health, and Expectation During the Transition to Parenthood

Principal Investigator: Jill Giresi, Doctoral Candidate, Psychology Department, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be 18 years of age or older, be able to read English, have given birth to your first baby within the last 6 months, identify as being in a heterosexual relationship and have been married or living together for at least 1 year. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

The purpose of the study is to examine the transition to parenthood in couples to identify if prior infertility impacts relationship satisfaction, expectations, and mental health during the postpartum period.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to complete a series of questionnaires related to demographic information, method of conception, relationship satisfaction, postpartum anxiety and depression, and parenting perceptions. The study is expected to take no more than 20 minutes to complete.

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include a better understanding how first-time parents transition to parenthood. Identifying the needs couples have in the first months postpartum may help to inform more tailored interventions for other couples.

What risks might you experience from being in this study?

The expected risks from participating in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Research records will be stored securely, and only the researcher will have access to the records.

- Participant responses will be anonymous.
- Data will be stored on a password-locked computer. After five years, all electronic records will be deleted.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time prior to submitting the survey without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please exit the survey and close your internet browser. Your responses will not be recorded or included in the study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Jill Giresi. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [_____](#). You may also contact the researcher's faculty sponsor, Diane Pearce, Ph.D. at

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

APPENDIX C: SCREENING QUESTIONNAIRE

Screening Questionnaire

1. Are you 18 years or older?
 - Yes
 - No

2. Are you currently in a romantic, heterosexual relationship that you have been in for at least 1 year?
 - Yes
 - No

2. Did you and your partner give birth your first child within the last six (6) months?
 - Yes
 - No

APPENDIX D: DEMOGRAPHIC QUESTIONNAIRE

Demographic Questionnaire

Please answer the following questions before proceeding to the next page.

1. What is your age (in years): _____
2. What is your gender?
 - Male
 - Female
 - Prefer not to say
 - Other
3. What is your race/ethnicity?
 - White
 - Black or African American
 - Hispanic
 - American Indian or Alaska Native
 - Asian
 - Native Hawaiian or Other Pacific Islander
4. What is your relationship status?
 - In a relationship
 - Married
5. How long have you been with your partner (in years)? _____
6. How old is your infant (in weeks)? _____
7. How did you conceive your baby?
 - Spontaneous conception

o Assisted reproductive technology (e.g., IUI, IVF, medicated timed intercourse)

APPENDIX E: COUPLES SATISFACTION INDEX (CSI-16)

Couples Satisfaction Index (CSI; Funk & Rogge, 2007)

1. Please indicate the degree of happiness, all things considered, of your relationship.

Extremely Unhappy	Fairly Unhappy	A Little Unhappy	Happy	Very Happy	Extremely Happy	Perfect
0	1	2	3	4	5	6

Most people have disagreements in their relationships. Please indicate below the approximate extent of agreement or disagreement between you and your partner for each item on the following list.

	All the time	Most of the time	More often than not	Occasionally	Rarely	Never
2. In general, how often do you think that things between you and your partner are going well?	5	4	3	2	1	0
	Not at all True	A little True	Somewhat True	Mostly True	Almost Completely True	Completely True
3. Our relationship is strong	0	1	2	3	4	5
4. My relationship with my partner makes me happy	0	1	2	3	4	5
5. I have a warm and comfortable relationship with my partner	0	1	2	3	4	5
6. I really feel like part of a team with my partner	0	1	2	3	4	5
	Not at all	A little	Somewhat	Mostly	Almost Completely	Completely
7. How rewarding is your relationship with your partner?	0	1	2	3	4	5
8. How well does your partner meet your needs?	0	1	2	3	4	5
9. To what extent has your relationship met your original expectations?	0	1	2	3	4	5
10. In general, how satisfied are you with your relationship?	0	1	2	3	4	5

For each of the following items, select the answer that best describes *how you feel about your relationship*. Base your responses on your first impressions and immediate feelings about the item.

11.	INTERESTING	5	4	3	2	1	0	BORING
12.	BAD	0	1	2	3	4	5	GOOD
13.	FULL	5	4	3	2	1	0	EMPTY
14.	STURDY	5	4	3	2	1	0	FRAGILE
15.	DISCOURAGING	0	1	2	3	4	5	HOPEFUL
16.	ENJOYABLE	5	4	3	2	1	0	MISERABLE

APPENDIX F: EDINBURGH POSTNATAL DEPRESSION SCALE (EDPS)

Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987)

As you have recently had a baby, we would like to know how you are feeling. Please check the answer that comes closest to how you have felt **IN THE PAST 7 DAYS**, not just how you feel today.

In the past 7 days:

- | | |
|---|--|
| <p>1. I have been able to laugh and see the funny side of things</p> <ul style="list-style-type: none"> <input type="checkbox"/> As much as I always could <input type="checkbox"/> Not quite so much now <input type="checkbox"/> Definitely not so much now <input type="checkbox"/> Not at all | <p>*6. Things have been getting on top of me</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes, most of the time I haven't been able to cope at all <input type="checkbox"/> Yes, sometimes I haven't been coping as well as usual <input type="checkbox"/> No, most of the time I have coped quite well <input type="checkbox"/> No, I have been coping as well as ever |
| <p>2. I have looked forward with enjoyment to things</p> <ul style="list-style-type: none"> <input type="checkbox"/> As much as I ever did <input type="checkbox"/> Rather less than I used to <input type="checkbox"/> Definitely less than I used to <input type="checkbox"/> Hardly at all | <p>*7. I have been so unhappy that I have had difficulty sleeping</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes, most of the time <input type="checkbox"/> Yes, sometimes <input type="checkbox"/> Not very often <input type="checkbox"/> No, not at all |
| <p>*3. I have blamed myself unnecessarily when things went wrong</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes, most of the time <input type="checkbox"/> Yes, some of the time <input type="checkbox"/> Not very often <input type="checkbox"/> No, never | <p>*8. I have felt sad or miserable</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes, most of the time <input type="checkbox"/> Yes, quite often <input type="checkbox"/> Not very often <input type="checkbox"/> No, not at all |
| <p>4. I have been anxious or worried for no good reason</p> <ul style="list-style-type: none"> <input type="checkbox"/> No, not at all <input type="checkbox"/> Hardly ever <input type="checkbox"/> Yes, sometimes <input type="checkbox"/> Yes, very often | <p>*9. I have been so unhappy that I have been crying</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes, most of the time <input type="checkbox"/> Yes, quite often <input type="checkbox"/> Only occasionally <input type="checkbox"/> No, never |
| <p>*5. I have felt scared or panicky for no very good reason</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes, quite a lot <input type="checkbox"/> Yes, sometimes <input type="checkbox"/> No, not much <input type="checkbox"/> No, not at all | <p>*10. The thought of harming myself has occurred to me</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes, quite often <input type="checkbox"/> Sometimes <input type="checkbox"/> Hardly ever <input type="checkbox"/> Never |

APPENDIX G: POSTPARTUM SPECIFIC ANXIETY SCALE RESEARCH SHORT-
FORM (PSAS-RSF)

**Postpartum Specific Anxiety Scale Research Short-Form (PSAS-RSF; Davies et al.,
2021)**

0 = Not at all, 1 = Not Very Often, 2 = Often = 3 = Almost Always

1. I have worried about the length of time my baby sleeps
2. I have felt unable to juggle motherhood with other responsibilities
3. I have worried that my baby is picking up on my anxieties
4. I have had negative thoughts about my relationship with my baby
5. I have worried about my baby's milk intake
6. I have worried that my baby will stop breathing while sleeping
7. I have felt that I have had less control over my day than before my baby was born
8. I have repeatedly checked on my sleeping baby
9. I have felt that my baby would be better cared for by someone else
10. I have worried more about my finances than before my baby was born
11. I have worried about my baby's weight
12. I have worried that I'm not going to get enough sleep
13. I have felt frightened when my baby is not with me
14. I have worried about getting my baby into a routine
15. I have worried about my baby being accidentally harmed by someone or something
16. I have worried I will not know what to do when my baby cries

APPENDIX H: THE PERCEPTIONS OF PARENTING INVENTORY (POPI)

The Perceptions of Parenting Inventory (POPI; Lawson, 2004)

1 = strongly disagree 2 = somewhat disagree 3 = slightly disagree 4 = neither agree or disagree 5 = slightly agree 6 = somewhat agree 7 = strongly agree

1. Caring for my child will bring me happiness.
2. My child will be a source of pride for me.
3. Caring for my child will be fun.
4. Parenting my child will be rewarding.
5. I will enjoy watching my child grow up.
6. My child will benefit other children in my family.
7. My spouse/partner and I will grow closer together through the experience.
8. Parenting my child will make me a better person.
9. Caring for my child will interfere with me spending time with my friends.*
10. I will have less time to spend doing what I enjoy.*
11. Caring for my child will interfere with the time I wanted to spend with my spouse.*
12. Parenting will put a strain on my relationship with my spouse/partner.*
13. I will need to care for my child for the rest of my life.*
14. Parenting my child will be a never-ending responsibility.*
15. My child will be dependent on me for the rest of my life.*
16. Parenting my child will be a 24-hour a day responsibility.*
17. Raising my child will be financially expensive.*
18. Parenting my child will be emotionally exhausting.*
19. Caring for my child will physically exhaust me.*

20. I will worry about my child's future.*
 21. I will look forward to being a grandparent in the future.
 22. Our relationship will change over the years from parent to friend.
 23. My child will provide me with financial security in my old age.
 24. My child will carry on my family line.
 25. My friends and family will help me to care for my child.
 26. My community will provide me with social support.
 27. My family and friends will provide social support to me.
-

Note: * *Indicates reverse scored items*

APPENDIX I: IRB APPROVAL

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

November 10, 2023

Jill Giresi
Diane Pearce

Re: IRB Exemption - IRB-FY23-24-536 The Impact of Infertility on Relationship Satisfaction, Mental Health, and Expectations During the Transition to Parenthood

Dear Jill Giresi, Diane Pearce,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 2.(i). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;

For a PDF of your exemption letter, click on your study number in the My Studies card on your Cayuse dashboard. Next, click the Submissions bar beside the Study Details bar on the Study details page. Finally, click Initial under Submission Type and choose the Letters tab toward the bottom of the Submission Details page. Your information sheet and final versions of your study documents can also be found on the same page under the Attachments tab.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,
G. Michele Baker, PhD, CIP
Administrative Chair
Research Ethics Office