The Qualitative Report

Volume 21 | Number 3 Article 5

3-14-2016

The Fertility Problem Inventory and Infertility-Related Stress: A Case Study

Staci L. Born
Johnson State College, staci.born@sdstate.edu

Jennifer J. Preston
Saybrook University

Recommended APA Citation

Born, S. L., & Preston, J. J. (2016). The Fertility Problem Inventory and Infertility-Related Stress: A Case Study. *The Qualitative Report*, *21*(3), 497-520. https://doi.org/10.46743/2160-3715/2016.2307

The Fertility Problem Inventory and Infertility-Related Stress: A Case Study

Abstract

More than seven million people of childbearing age in the United States experience infertility. Oftentimes, for women, the experience of infertility is stressful. The Fertility Problem Inventory (FPI) has been used to quantitatively measure women's experience of infertility-related stress. However, the construct of infertility-related stress is poorly described in existing literature. The purpose of this case study was to understand how women experience the FPI as a measure of infertility-related stress. To address this issue, women who were undergoing infertility treatment completed the FPI and participated in unstructured interviews. Archival documents were also retrieved to corroborate findings and satisfy saturation. Results indicated that the FPI is lacking in structure and organization to describe women's experiences of infertility-related stress. Specifically, women described feeling infertility having an influence upon their identity and their coping.

Keywords

Infertility-Related Stress, Infertility, Fertility Problem Inventory, Case Study, Qualitative

The Qualitative Report 2016 Volume 21, Number 3, Article 3, 497-520

The Fertility Problem Inventory and Infertility-Related Stress: A Case Study

Staci L. Born
Johnson State College, Johnson, Vermont, USA

Jennifer J. Preston
Saybrook University, Oakland, California, USA

More than seven million people of childbearing age in the United States experience infertility. Oftentimes, for women, the experience of infertility is stressful. The Fertility Problem Inventory (FPI) has been used to quantitatively measure women's experience of infertility-related stress. However, the construct of infertility-related stress is poorly described in existing literature. The purpose of this case study was to understand how women experience the FPI as a measure of infertility-related stress. To address this issue, women who were undergoing infertility treatment completed the FPI and participated in unstructured interviews. Archival documents were also retrieved to corroborate findings and satisfy saturation. Results indicated that the FPI is lacking in structure and organization to describe women's experiences of infertility-related stress. Specifically, women described feeling infertility having an influence upon their identity and their coping. Keywords: Infertility-Related Stress, Infertility, Fertility Problem Inventory, Case Study, Qualitative

According to RESOLVE, the National Infertility Association, more than seven million people of childbearing age in the United States experience infertility (RESOLVE, 2012). Social and cultural attitudes in the United States present young girls with the assumption that becoming a parent, is a natural, desirable, and unstoppable life transition. For women who do not transition to parenthood because of infertility, these attitudes provoke confusion, distress, and anxiety. Therefore, infertility is an unexpected disruption for those who expect parenthood to be a key identity and adult activity (McQuillan, Greil, White, & Jacob, 2003). The rate of infertility amongst the population in the United States is 10-15%. For a couple not experiencing infertility, the month-to-month rate of conception is about 25%, where 85% of these couples will conceive in a 12-month period. Infertility has been defined as, "the result of a disease (an interruption, cessation, or disorder of body functions, systems, or organs) of the male or female reproductive tract which prevents the conception of a child or the ability to carry a pregnancy to delivery" (ASRM, 2012).

Often, infertility for women can result in stress; affecting perceptions and experiences of physical, spiritual, emotional, sexual, and psychological well-being (Tufford, 2011; Watkins, & Baldo, 2004). Reflecting the degree of psychological stress concordant with fertility problems, one study reported that half of women described infertility as the most distressing experience of their lives (Freeman, Boxer, Rickels, Tureck, & Mastrioanni, 1985). Others found that women experiencing infertility problems did not differ on measures of stress from cancer, cardiac rehabilitation, and hypertension patients (Domar, Zuttermeister, & Friedman, 1993).

It is clear in the literature that infertility can be a stressful experience for women. There is not a clear understanding of the construct of infertility-related stress. Researchers historically used measures of psychopathology such as the CD-RISC (Sexton, Byrd, & von Kluge, 2009), CES-D (Greil, McQuillan, Lowry, & Shreffler, 2011), Beck Depression

Inventory (Edelmann & Connolly, 1998; Sexton et al., 2009) and State Trait Anxiety Inventory (Edelmann & Connolly, 1998), which fail to capture the experience of infertility-related stress by funneling it into experiences of depression and anxiety. Other research has extrapolated questions those researchers felt were important to the construct of infertility-related stress (Greil et al., 2011; Schneider & Forthofer, 2005) which contributes to the inconsistent definition and measurement of this construct.

A number of infertility-specific stress measures have been developed, but not one of these measures has been identified as a standard measure (Gourounti, Anagnostopoulos, & Vaslamatzis, 2010; Greil et al., 2011). The Fertility Problem Inventory (FPI), proposed by Newton, Sherrard, and Glavac, (1999) described the experience of infertility-related stress through five domains: social concern, including sensitivity to comments, reminders of infertility, and feelings of social isolation; sexual concern, including decreased sexual enjoyment and timed intercourse; relationship concern, including difficulty talking with partner about infertility and concerns about impact of infertility on quality of relationship; rejection of childfree lifestyle, including a negative view of living child-free and decreased future happiness dependent on having a child; and need for parenthood, including viewing parenting as an essential life goal (Moura-Ramos, Gamerio, Canavarro, & Soares 2012; Newton et al., 1999). Research has found the FPI to discriminate between general stress and infertility-related stress when compared with scores of the Symptom Checklist 90-Revised (Sexton, Byrd, O'Donohue, & Jacobs, 2010).

Existing literature focuses on the quantitative measure of infertility related stress. The purpose of this qualitative case study was to increase understanding of how women experience the Fertility Problems Inventory (FPI) as a measure of infertility-related stress. To address this issue, women who are undergoing infertility treatment were recruited to complete the FPI. Although this instrument has been quantitatively validated, it lacks clarity in defining and describing the construct of infertility-related stress as well as utilizing a definitive model of stress. This knowledge is essential to providing adequate medical and mental health care to women and their families.

A distinctive feature of qualitative case study research is the researcher's influence on their research. It is not a license to uncritically impose bias, values, and assumptions onto the research (Maxwell, 2013; Strauss, 1987); however, it is an invitation of awareness of our primary experiences (Reason & Rowan, 1981). The first author presented her own bias and experience as a woman who has been diagnosed with infertility. Her own experience with infertility, infertility treatments, and how her family was impacted inspired her graduate education research and mental health practice with women experiencing infertility. The second author of the study served as the dissertation chair and as a qualitative research mentor.

Method

Qualitative methods allow a researcher to understand a phenomenon through the meaning that an individual or group of individuals ascribes to it (Creswell, 2003). The intent of this research was to understand how women experience the FPI as a measure of infertility-related stress. Qualitative methods provide the most adequate tools to address this need for understanding by obtaining data through capturing women's experience with the FPI.

Meaning and significance of experiences is social and ebbs and flows through interaction with a human community. Infertility-related stress is best studied through social constructivism as women's meanings are constructed by their experiences as they engage with the world (Creswell, 2003). The theoretical perspective that informed this research was feminist theory. Lather (1986) clearly described the goal of feminist research as being one that aims to "correct both the invisibility and the distortion of female experience in ways relevant

to ending women's unequal social position" (p. 68). Particularly, the feminist research lens allowed for the reconceptualization, redefinition, and increased understanding of women's experiences of infertility-related stress. Case study research includes the study of experiences within a real-life setting (Yin, 2013). Further, case study research "investigates a contemporary phenomenon (the *case*) in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident," (Yin, 2013, p. 4).

While Newton et al. (1999) identified that most infertility-related stress measures lacked a theoretical basis for understanding stress, these authors also fail to discriminate what theoretical model of stress informed their measure. For the purpose of this study, the Transactional Model of Stress as described by Lazarus and Folkman (1984) was used as a model of understanding stress. Lazarus and Folkman (1984) described stress as a transaction between the person and the environment in which the person implicitly questions whether the stress may or may not cause harm through a primary appraisal. In the primary appraisal, an individual tends to ask questions like, "*What does this stressor and/ or situation mean*?", and, "*How can it influence me*?" Typically, these questions can be answered by: (1) "*this is not important*;" (2) "*this is good*;" and (3) "*this is stressful*." While the experience of infertility does not explicitly cause physical harm, the thought of the failure to achieve a key desired identity of parenthood can result in emotional and psychological stress to the individual.

When stress is detected, according to the model, a secondary appraisal takes place. During this secondary appraisal, one surveys their own resources and determines whether they are able to cope with the stress. When resources for coping are available, positive stress results and one may have the cognitive appraisals such as, *"I can do it if I do my best," or "I will try whether my chances of success are high or not,"* and *"If this way fails, I can always try another method."* When inadequate resources for coping are available, negative stress results and one might experience negative cognitive appraisals of the stress such as, *"I can't do it; I know I will fail," or "I will not do it because no one believes I can,"* and, *"I won't try because my chances are low,"* (Lazarus & Folkman, 1984). Additionally, stress related to a failing to achieve a valued identity increases as medical treatment and psychosocial variables amass. Stress of the experience of infertility encompasses elements that women are likely to appraise as stressful (Lazarus & Folkman, 1984): unpredictability, negativity, uncontrollability and ambiguity (Gourounti, Anagnostopoulos, Potamianos, Lykeridou, Schmidt, & Vaslamatzis, 2012).

Ensuring Trustworthiness and Credibility

Reliability in qualitative research is developed by documenting and creating a study that can be replicated and to achieve similar results (Yin, 2013). The goal of reliability in this research was to also minimize bias. To reduce the likelihood that data from the interviews was misinterpreted (Stake, 2006), the first author listened to the recordings of each interview at least three times to achieve redundancy and recorded memos following each listening. The first author also maintained detailed memos of her experience. These memos allowed her to be reflective and document assumptions. Further, these memos also served to help her remain focused on maintaining an inductive approach to the research (Baxter & Jack, 2008).

Member checks were used to assess and strengthen the accuracy of the data as well as the credibility of the findings. The two participants who checked the findings provided feedback to the researcher. Overwhelmingly, both members described that the findings "gave words to [their] experience." To increase the trustworthiness and credibility of the data, this researcher used triangulation. In order to achieve the use of multiple data sources, this research included data collected by interview, coding, archival document analysis, and interpretation. All categories, properties and dimensions were found to be a theme of three sources.

One peer reviewer provided feedback regarding the coding of this study's findings. The peer reviewer was to:

a) offer feedback on how the findings reflected participants' voices,
b) challenge any of the researcher's assumptions that had surreptitiously made their way into the findings,
c) flush out statements that were not supported by the data, and
d) question findings that could have interpreted differently.

Most importantly, throughout the process of research and writing, the second author, a qualitative expert, advised the first author on methods and limitations of the research. As recommendations were made, edits to the research methods and writing were appropriately applied.

Data Analysis

Part of the data collection for this study was completed through interviews with each participant that lasted about two hours. Interviews were held in a private office space reserved by the first author where participants completed the FPI and following completion, she asked the question: *How does the Fertility Problem Inventory capture your experience of infertility-related stress?* As is permissible by a more unstructured interview style, she explored the participant's experiences using probes and open-ended questions. Following the first interview, participants were told they might have a brief break of 10-15 minutes while the FPI was scored, and then they would resume the interview. Next, the first author described the results of the participant's FPI to the each woman, including a description of the domains of the FPI, and whether participant scores indicated "moderate, high, or very high" levels of infertility-related stress, as described by the authors of the FPI (Newton et al., 1999). Following the delivery of the results, the she asked the question: *How does the Fertility Problem Inventory capture your experience of infertility-related stress?* Again, appropriate probes and open-ended questions were asked to elucidate responses. This process was repeated with each participant; resulting in each participant completing two interviews, or six interviews in this case study. All interviews were recorded and transcribed by the first author. Transcribed interview documents were uploaded into MAXQDA software for coding.

The primary purpose of using documentation in case study research is to corroborate and augment evidence from other sources. Although documentation may include bias, it provided specific details to corroborate or contradict information from other sources (Yin, 2013). In this case study, scholarly studies that have been published using the FPI were included and reviewed as archival documents. A review of the available literature investigating the use and efficacy of measuring infertility-related stress with the FPI was completed in December of 2014. Archival documents were reviewed from studies conducted in the United States and European countries to limit the cultural disparities and social influences of infertility. Nineteen relevant articles were identified for further review. After closer review of the 19 articles for the content studied, 11 were included in the study. Articles removed from consideration were removed because they did not explicate how the FPI was used and what the results were. All included articles were uploaded to MAXQDA for coding. Articles included as a part of the archival document review process were then coded by the first author.

For the purpose of collecting, storing, and analyzing data, qualitative research software MAXQDA was used. MAXQDA served to organize themes and data generated by the user, and plot these themes into visual displays. Data collected was uploaded and stored in MAXQDA for coding and analysis. The coding strategy used in this research was the constant-

comparative method described by Lincoln and Guba (1985). The constant comparative method involved breaking down the data and coding it into categories. Through constant comparison, the categories were continuously refined, properties and dimensions were identified, relationships to one another were explored, and the sum of this experience was integrated into a coherent model (Lincoln & Guba, 2000). Throughout the coding process, all archival documents and interviews were viewed together, that is, not one piece of data was viewed as standing alone (Yin, 2013).

Participants

Prior to beginning this study, the research and data collection processes were approved by the Institutional Review Board at Minnesota State University, Mankato. To address the research question, three participants were selected through purposeful sampling. Purposeful sampling techniques were selected because they allowed the researcher to select participants who have the potential to inform to the research question to be addressed (Charmaz, 2006; Stake, 2006). Participant profiles are presented to help the reader understand who contributed to the rich data collected through interviews and illustrate an effective case study report. Pseudonyms have replaced participant names to protect their identities.

Gina. Gina is a 28-year-old female who resided on a rural dairy farm in a small farming community in south central Minnesota. Gina holds a Master's degree and reported that she was well-established in her career. Gina had been married for two years at the time of this interview and reported having begun to try to become pregnant at the onset of her marriage. She became involved in Assisted Reproductive Technology (ART) to become pregnant in 2013. Gina recognized that she did not expect to have difficulty becoming pregnant; many of her cousins had already easily started their families. Gina and her partner's mother have a stressed relationship. She recounted her mother-in-law talking about another family member struggling with infertility, to which her mother-in-law described that the family member "just wasn't made right."

During the early part of her journey to become pregnant, Gina reported having used reproductive services closer to her rural community that were Catholic-based and emphasized natural family planning methods, such as basal body temperature and cervical mucus monitoring. She and her partner decided to start with this approach since her partner and his family closely identified with Catholicism; although she did not closely resonate with a particular religious practice. After 14-months of unsuccessful attempts to become pregnant this way, Gina turned to traditional medical assistance for treatment of infertility. At a local clinic, she was diagnosed with Polycystic Ovarian Syndrome and was prescribed medication. Also at the local clinic, she reported having completed multiple unsuccessful intrauterine inseminations.

Looking for a change in medical providers and treatment, she and her partner decided to turn to in vitro fertilization (IVF). To receive treatment for IVF, she and her partner travelled more than 90 miles from their home for check-ups, laboratory blood draws, monitoring, and the actual IVF procedure. This physical distance to travel had caused some emotional stress for the couple, because it is difficult for her partner to leave the dairy farm and its responsibilities, resulting in a clash of values and questioning of intentions for the pair. At the new clinic, Gina's previous diagnoses were discarded, disagreeing with the previous practitioner, the doctor labeled the couple's difficulty as "unexplained infertility." Gina felt confused by the conflicting medical information but was unwilling to question her doctor as she felt an imperative urge to become pregnant as soon as possible.

At the time of the interview, Gina was about to undergo her fourth IVF cycle in a "live baby program," which she described a program provided by her IVF clinic in which she "gets

her money back if she does not take home a live baby from the hospital" after an allotted number of IVF cycles. This fourth cycle was her final cycle as a part of this "live baby" program.

Kelly. Kelly is a 32-year-old woman who resided in a town in south central Minnesota. Kelly and her partner have been married for more than six years at the time of the interview. Kelly has her Master's degree and described feeling successful in her career. When it came to starting a family, Kelly stated that she always knew she was going to be a mother because "too many psychics had told [her] so." Kelly maintained an open perspective and rested much of her hope in fate; she reported not having a strong religious affiliation.

Prior to seeking medical assistance for infertility, Kelly and her partner tried to conceive on their own for two years. Without attaining pregnancy on their own, the couple sought the advice of a local fertility nurse who recommended some behavioral changes (e.g., diet, exercise) for both Kelly and her partner. Both underwent testing at this local clinic, Kelly was diagnosed with Polycystic Ovarian Syndrome, and her partner's semen analysis was found to be insufficient. Due to the combination of male- and female-factor infertility presented, the couple had to seek treatment for him more than 70 miles away to which they learned that IVF was their most promising route to parenthood.

Kelly and her partner found a clinic to complete their IVF cycles, which was also a distance from their home. They underwent physicals and genetic testing and learned that Kelly tested positive for the methylenetetrahydrofolate reductase (MTHFR) gene, which can lead to serious genetic disorders such as anencephaly, spina bifida, and others. Kelly also learned that her thyroid needed to be regulated differently, and faced conflict with the IVF clinic over how she could regulate it while attempting to achieve pregnancy with them.

At the time of this interview, Kelly had come to an agreement with the clinic as to how she could regulate her thyroid. She and her partner had decided to put their first IVF cycle on hold as they focused attention on their relationship. Kelly stated that she was feeling confused as to which direction to go next. She questioned whether her partner really wanted to have a family, as he seemed to avoid the conversations and would say that he was ok if they did not have children. Kelly was trying to imagine what her life could be like without children, or without her partner.

Carla. Carla is a 40-year-old female who resided in a town in south central Minnesota. Carla described her journey to parenthood, as one she "always felt she would attain," and therefore "did not feel much pressure to pursue the path to pregnancy in her early thirties, as [her] career took off."

Carla had been married and divorced twice. Her first marriage ended when she was 32 and had been married to him for six years. She reported that this marriage ended when she asked her partner if he was ready to have kids, to which he replied "no." Carla reported that she discussed her desire to have children with her second husband before they married and that the two agreed they would have a family. However, this marriage ended as they entered in to ART to become pregnant. On the morning her ex-husband was to provide a semen sample for their intrauterine insemination, he refused. Carla described feeling "shattered, betrayed, and unable to trust." Subsequently, Carla reported that this marriage ended because she and her partner did not agree on having children.

Carla was diagnosed with Polycystic Ovarian Syndrome in her early 30s by a local fertility nurse, and had worked closely with her to identify treatments that would help her become pregnant. Following the dissolution of both of her marriages, Carla sought out donor sperm to attempt to become pregnant on her own. This procedure proved emotionally enduring, expensive, and unsuccessful for her. As Carla re-entered the dating world at 39, she became close with her next partner, who was younger than she was, and eager to become a father. Carla described feeling skeptical, cautious, and hesitant to trust him as he freely offered

to visit the urologist, take vitamins, and support her in any treatment she may need to undergo to become pregnant.

Carla reported having people in her life for support in her infertility journey. She was very close to her sister who lived more than 300 miles away. She reported that when her sister became pregnant, she was surprised to feel joy instead of jealousy. Carla reported she was the only woman she was aware of in her family having difficulty conceiving. Carla's mother did not experience infertility, and in fact told Carla of a story of one of her friends whom distanced herself from Carla's mother when she became pregnant with her children, because she had been told she could not have children of her own because of infertility. Carla said her mom felt miffed by her friend's distancing behaviors but was happy when her friend re-entered her life following her children growing out of the baby stage. However, this same friend distanced herself again as Carla's mother became a grandmother; a reminder of the transition in life that this woman would not experience.

At the time of the interviews for this research, Carla and her partner were actively trying to become pregnant through timed intercourse, and were discussing future options of intrauterine insemination and IVF. Carla felt that her partner understood her preoccupation with time, in that she felt she did not have a large window to become pregnant herself, due to her age.

Findings

Three key categories evolved from the data coded: *Hope, Avoidance, and Identity.* From the key categories, properties were identified, and in some properties, further dimensions were elucidated.

Hope

Through evaluation of the findings, the category of *Hope* emerged as a coping strategy for managing infertility-related stress. The experiences within *Hope* often motivated women to keep going in their treatment, to reach out for support, and to recognize their own strengths. Gina eloquently inquired, "I'm meeting these people now, everywhere I turn, who are also experiencing infertility. Where were they before, before I started and knew this too?"

Hope is understood as an identification of available resources for coping with infertility-related stress, recognized supports, an understanding or insight that this experience has a waxing and waning effect. Carla described, "There's been times where, it just ebbs and flows. That's how I have felt like it's been; it's ebbed and flowed with each cycle and each day." Hope also includes the important acknowledgment that medical and mental health research is indicating attention towards infertility-related stress as well as the understanding that the experience of infertility-related stress is different for men and women. Properties identified as a part of the category of *Hope* include *Primary Relationship Support, Depth of Experience,* and *Difference in Male/Female Experience* of infertility and infertility-related stress.

Primary Relationship Support. A property evident by all participant interviews was that there was bonding that occurred with participant's partners through the experience of infertility-related stress that was coded by the researcher as *Primary Relationship Support*. Although stress can be identified as a negative experience, the presence of helpful supports resonated with all participants and was supported by archival documents reviewed. Enduring these stressful events and coming through the stressful events as a dyad, at times, felt as though it strengthened the relationship. For example, Carla, Interview 1, described her appreciation for her partner's enthusiastic attitude: "Yeah like I said, he's been on board with like; you need

me to take a test? Sure. Oh, you want me to take these vitamins? Sure. You want me to quit caffeine? Sure."

Gina, Interview 1, illustratively described bonding with her partner over the stressful treatments related to infertility:

> It brings you together too. There is a certain level of bonding that I guess occurs when, we are like, with the IVF. So like in one cycle, it might be when we're there doing the treatment, and I'm waking up and he's there for when they put the IV in my arm, and you know, he's there for that as we're both anxiously awaiting how many eggs were retrieved.

Moreover:

> So shots, for example: terrifying. There is a meltdown for that. It was a stressful situation and I think [he] gave me hope because he had a lot of confidence…He is calm and gentle, and does not make it hurt. He was able to make it a good experience; he was able to go fast. And so these things just helped me to overcome my fear of this shot that I thought was going to be terrible…It's probably overcoming something together.

Gina resonated with her personal insight that although the experience of infertility had been incredibly stressful for her marriage, it had also presented unique opportunities for her to find strength and support from her partner. This sense of attempting to achieve pregnancy "together" and being in it for each other resonated from the three participant interviews.

Archival documents reviewed as a part of this case study found that dyadic adjustment could partially mediate the effects of infertility-related stress as measured by the FPI. That is, couples who are satisfied in the relationship, experience cohesion, and affective expression in a positive manner with their partners are likely to have less stress related to infertility (Galhardo, Cunha, & Pinto-Gouveia, 2013; Peterson, Newton, & Rose, 2003). Interviews and archival documents reveal that dyadic strengths can mediate the negative experiences of infertility-related stress.

The FPI assesses the specific domain of Relationship Concern as it relates to infertility-related stress and dyadic functioning. For example, the FPI includes questions and elements of detecting support within a primary relationship, including, "My partner and I work well together handling questions about our infertility," and "I could visualize a happy life together, without a child (or another child)." However, these are the two questions of the total 46–items in the FPI that specifically present a *positive* relationship aspect or results of infertility-related stress. The remainder of the questions related to infertility-related stress and relationship functioning are negatively directed and problem-oriented.

Depth of Experience. *Depth of Experience* was described as thoughts and reactions reported about the participants' own journey of their infertility experience; as well as how it has ebbed and flowed. For example, Gina, Interview 2, describes: "Infertility is an experience, but I also feel like there's different levels of it." As she recounts her own journey of infertility and the depth of her experience as her levels of stress have risen and fallen through each course of treatment. She elaborates on this: "You know, you have people who are like into it at the beginning, where they're just starting their journey. And there's a lot more hope, I feel like," (Gina, Interview 2). Her reflections here not only illustrates the loss of hope and emotional distancing she has experienced, but also a reflective insight on how her journey and infertility-related stress has shifted throughout time and courses of treatment.

The *Depth of Experience* of infertility is also corroborated by findings in archival documents in this case study that record that women's scores on the CD-RISC, a measure of general stress, were significantly and negatively correlated with infertility-related stress as measured by the FPI (Sexton et al., 2009). Additional documentation reviewed found that as women progressed through multiple cycles of infertility treatment, they reported a significant increase in depressive and/or anxious symptoms (Lawson, Klock, Pavon, Hirshfield-Cytron, Smith, & Kazer, 2014).

While measuring for infertility-related stress, the FPI lacks the qualitative experience of understanding where an individual is at in the course of treatment – first cycle of assisted reproductive technology versus being years into the experience. The development of the FPI did include an examination of fertility history, however this construct was dichotomously defined as whether the individual taking the measure had previous children or did not. This approach fails to capture the *Depth of Experience* described by participants and archival documents in this case study; and may not be accurately captured by any quantitative measure.

Difference in Male/Female Experience. Archival documents reviewed that included the FPI in their research found that the experience of infertility-related stress for men and women is different. Findings include that women were found to score significantly higher than men did on all subscales of the FPI (Cousineau, Green, Corsini, Barnard, Seibring, & Domar, 2006; Peterson, et al., 2003; Slade, O'Neill, Simpson, & Lahen, 2007). Newton et al. (1999) elaborated that women score higher than men on the global stress index as well as the domains of Social concern, Sexual concern, and Need for Parenthood in the FPI. Although it is not known how much higher women score, Newton et al. (1999), hypothesized that women might be more likely to access social support, which in turn creates more conversations about children that can make women feel socially vulnerable or stigmatized.

Interviewees provided a similar yet different description of the *Difference in Male/Female Experience*, which seems to support earlier research reviewed regarding the consuming nature of infertility treatment for women, regardless of which partner is diagnosed with the infertility problem Gina described, (Interview, 1):

> I wonder if he wants it as much as I do. Since he does not want to talk about it as much as me, seems to find the appointments getting in the way of his work, and his attitude towards it all is just that it will happen when it is supposed to happen. That does not help. It makes me question him, and wonder if it is as important to him as it is to me.

Kelly also described a disconnection between she and her partner's experience and desire for infertility treatment, (Interview, 2):

> He gives so much attention to the things he is passionate about, especially golf. Really, the guy will clean his clubs every night. And I give a similar amount of attention to becoming pregnant, and it makes me question him, if he really wants this as much as I do, since he does not appear to spend as much time or energy with it. And it's not like he's there to talk about it when I want to, he seems to brush it off and avoids talking about it actually.

While earlier describing moment of *Primary Relationship Support* through the experience of infertility, there were identified patterns of incongruences in support or availability of support from partners that seemed to lead women to question their partners' desires.

These findings leave more questions than answers. First, having intentionally interviewed only women in this study, the experience of men has been filtered through the

lenses of their female partner's experiences and interpretations. Then, much of the *Difference in Male/Female Experience* in infertility-related stress experiences seems related to social and cultural variables. That is, the contexts and norms that society imposes upon women, how women interact with each other, and how women view themselves in comparison to others seems to influence this domain of infertility-related stress most. While the FPI recognized the male/female differences in the experience of infertility, it lacks the description of coping, resiliency, and support; components of the category of *Hope* revealed in this case study.

Avoidance

The category of *Avoidance* emerged from the data as ways of avoiding and diffusing affective intensity through engaging with future concerns or creating an emotional distance. Kelly, Interview 2, insightfully described:

> …am I really coming to terms with myself, or am I just looking at the surface, saying *ok other people can be happy without having kids and…* and when I say that I think I can be happy without having kids and I can just throw my entire self into work… and I wonder how much is that cognitive like, *it's fine, everything will be fine*.

She attempted to use logic to convince her heart that perhaps she too can be happy living a childfree lifestyle. Also, as Gina described in her first interview: "it feels like my environment is determines how well I can handle infertility stress." Gina's self-determination of her ability to cope being externalized by the environmental difficulties she may or may not be experiencing vividly captures the need, or desire, to control for as much as possible in one's life during infertility. In her second interview, while she described the ups and downs of her infertility journey, also related to distancing herself more from the hope she experienced in the earlier stages: "You know, you have people who are like into it at the beginning, where they're just starting their journey. And there's a lot more hope, I feel like," (Gina, Interview 2). The properties of *Preoccupation, Distancing*, and *Control* emerged and are described here.

Preoccupation. The property of *Preoccupation* was described all participants and includes the dimension of *Future Considerations*. This property is understood as a devotion of mental energy, rumination and obsession, related to infertility. For examples: "I literally I'm looking at the calendar as far as when is my next visit with him and where might that fall for me." (Carla, Interview 1). In this quote, she described the amount of mental energy she expelled in planning the next opportunity she might have to be able to try to conceive with her partner. This is also an example of *Avoidance* and *Distancing*, as it forced her from staying away from the here-and-now emotions of infertility-related stress and emphasizes *Preoccupation* with future encounters and energy to plan.

Additionally, "In every free second I have I am thinking about getting pregnant, about us," (Kelly, Interview 1) and later:

> Like at work, I don't know how I'm doing my job. I'm just not fully there, I'm thinking about a million other things and how I would rather be doing and being anywhere else but being there, but I get through it…

Gina related to spending lots of mental energy "planning for the next step," of her infertility journey and the next stage of treatment. Gina's experience illustrated another example of *Avoidance*, as she was avoiding staying in the present moment emotion by escaping to preoccupation about the future.

Future Considerations. The dimension of *Future Considerations* was identified within *Preoccupation*. This dimension can be best understood as the preoccupation focusing on the next stage of treatment, considering all possible outcomes as a way of coping with the present stress related to infertility. As in Gina, Interview 1, "I'm always rooting for, okay, there's always another step. You know, there's always another step," and as Carla processed, "I mean if we tried to adopt and couldn't adopt a baby or something, whatever reasons that that it happened…" Both women presented their concerns, and focused on the next stage of treatment. As a way of coping with the painful present emotions, they prepared themselves for the emotional rollercoaster of what may occur next in fulfilling their dreams of becoming mothers.

In comparing this theme of *Preoccupation* to Newton's FPI, it seems that the FPI is again lacking the description of understanding the degree of consumption that infertility has undertaken on an individual's life and how this might be affecting other domains of their life.

Distancing. *Distancing*, in this property, is an emotional distancing versus a physical distancing. It was described by participants as separating oneself emotionally from the experience of infertility, denying the impact of infertility, *Avoidance*, and minimizing. A quote demonstrating this theme:

> I know I don't need to have a child to be the person I am, or to have relationships I want to have, you know what I mean? It is not a need. Like I need oxygen, I don't need a child. (Carla, Interview 2)

Here, Carla described her desire for parenthood, and as she got close to emotionally sensitive conversation, she distanced herself and focus more on biological needs versus her emotional wants as a means of coping with stress related to infertility. Another example of distancing, "I think when I can get out of my head space and listen to my body, that is when I know that the stress is really there, and impacting me," (Kelly, Interview 1). As Kelly insightfully shared, she had made a connection to her coping style of using logic and cognition to emotionally distance herself from present stress she was experiencing.

While the FPI is a measure of the experience of infertility-related stress, it is not a measure of how one is coping, managing, or interpreting the stress. Additionally, it lacks a theoretical framework for understanding stress, and does not inquire about whether or not participants feel they have adequate resources to cope with this stress.

Control. A property emerging from the data was described as *Control*. In these data, *Control* can be conceptualized as a spectrum; on one end is a need for having as much control as possible, and on the other end is this total feeling of no control. It was found in the data that one person could experience both ends of the spectrum in their need for control, which seemed to increase their experience of infertility-related stress. "Like he'd go pick up a refill, but is he actually putting it into his body?" as Carla described her need for control and knowing if her partner was contributing to their quest for parenthood. Then on the other experience of *Control*, Carla described her experience of undergoing infertility treatment, particularly an intrauterine insemination, in which she explained, "you're just so exposed in that situation, physically and emotionally."

Another aspect of *Control* described in the data was the subscription of control to outside sources, which is also related to distancing and *Avoidance*, described earlier. Gina described, "It feels like my environment determines how well I can handle infertility stress," as she described how she feels more able to handle infertility stress if she feels like she has her environmental, external stress under control. This is also supported by Lazarus and Folkman's model of stress, which requires individuals to determine if they have adequate resources to determine if they can handle the stress. Additionally, documentation revealed that low

perception of personal control is positively correlated with infertility-related stress (Gouroutini et al., 2012).

While the FPI serves to measure the experience of infertility-related stress, it is lacking in the description of participants' need for *Control* or perceived need for *Control*. It does serve to identify areas of living that may be causing stress, however it is lacking in recognizing important internal dialogue a woman is having with herself in regards to her ability to cope with stress by feeling some sense of perceived *Control*.

Identity

The category of *Identity* was a part of the data that was not overtly stated but covertly described by the essence of participant stories. *Identity* described a shift in how one might think of themselves and their future identities, as evidenced by Carla, Interview 1: "I feel like it makes me less of a person, less of a woman, less of value in society because I can't do anything about it." This quote illustrated an intense internal emotional dialogue this participant experienced in questioning who she was as a woman, and not only feeling role failure in achieving parenthood, but also role failure in achieving key identity as a woman.

In addition, *Identity* described the central role that parenthood has in one's life: "But I don't feel like if I can't have children somehow I failed in my life," and, "But, it's just what's out there, like, I might never have that [parenthood]," (Carla, Interview 1). As well as in Gina, "I could feel not fulfilled if we didn't have children," and:

> I don't necessarily think that I was born, or not meant to be. . . . Like I said, it's been something I've always wanted. It has always been in my plans. When I looked ahead in life it always included children. (Gina, Interview 1)

These quotes not only demonstrate the central role that having children and achieving parenthood means for the women participants, but also the intensity of the emotional determination and unwillingness to allow a key part of their identity to be *un*fulfilled.

Newton (1999) discussed that the constructs of role loss and role failure were largely related to a social context and therefore included these areas of concern in the Social concern domain of the FPI. Further describing the category of *Identity* are the following properties: *Body Dysfunction, Desire for Parenthood, Primary Relationship Stress*, and *Social Relationship Stress*.

Body dysfunction. An important property of *Identity*, which captured more of the physical dysfunction versus the emotional reaction, is *Body Dysfunction*. Participants described feeling anger and sadness at the result of their body not functioning as they expected it to, or as in comparison to individuals in their social groups. For example, Carla, Interview 1:

> But it's just one of those things that's like okay but I did lose weight and I took the drugs and I've done this and (pauses) you know, I, I guess for me the biggest thing is my age. Like I'm just running out of time (crying).

A large amount of stress Carla experienced was related to her body not functioning optimally due to her advanced biological age. Gina, Interview also described:

> These women, who are obese, who do drugs, who smoke. In addition, doing all this gross stuff and they can have kids. I control for everything. I'm healthy. I take care of myself. I go above and beyond, and my body is not working. I feel terrible.

As described earlier in the theme of identity, in developing the FPI, Newton (1999) included the experience of *Identity* within the domain of Social concern. However, while it does include nuances of comparing self to others, it is important to understand the individual dialogue and internal emotional reactivity that results.

Resiliently, Gina described her way of coping with her perception of her *Body Dysfunction*, as she searched for ways to channel her energy and develop different perceptions of her body's functioning:

> So things that I thought about moving forward: I needed to pick something out for a challenge for my body that I could feel ok about. I don't know if I needed to relieve that, or if I needed to achieve something…Umm, I needed to find something. Like I need to prove to myself, that I am capable. That it's strong. You know, that it feels good.

Desire for parenthood. The property of *Desire for Parenthood* is an obvious consideration in the realm of infertility-related stress. Three important dimensions related to desire for parenthood emerged *Worthy of Parenthood; Desire for Parenthood for Women*; and *Perceived Desire for Parenthood for the Partners.*

Worthy of Parenthood. First, the dimension *Worthy of Parenthood*, related to participants questioning why they and their partners, were experiencing infertility. All three participants alluded to questioning higher powers. This theme seems to be largely related to a spiritual or existential dilemma. Participants really seemed to wonder why they seemed to be "chosen" to undergo this journey, while it was not one they had chosen for themselves. While this related to other themes presented in the findings (*Control, Social Stress*), it seemed to be separated by participant's internal questioning this worth to the higher power – regardless of religious affiliation, or asking existential question of, *who am I without this key role achievement that I have imagined for myself?*

In reviewing the development of the FPI, Newton (1999) dissected this dimension into three domains: Social concern, Rejection of childfree lifestyle, and Need for parenthood. While these three domains explore this dimension, they seem to take a multidimensional construct and flatten it by removing the affective and spiritual connotations that participants expressed.

Desire for Parenthood for Woman/Partner: Next, the two dimension *of Desire for Parenthood for Women* and Perceived *Desire for Parenthood for the Partner*s emerged. While the interviews were conducted with women alone, the P*artner's Perceived Desire for Parenthood* is the description of the women participants describing how they perceived their partner's desires. Gina, Interview 1, captured both of these dimensions in:

> That [parenthood] was a central thing to both of us. So I think, I don't know, I am just thinking about how I could feel not fulfilled if we didn't have children. Umm, he's a farmer, that doesn't provide a whole lot of room for travel, and we don't have a lot of together time, so, if we don't have kids and we don't have together time, I don't know.

In addition, again later, Gina elaborated:

> I just don't feel like that could be me, I will one way or another have children. It's just something that's a piece of me. There's adoption, there's options. I

> will have children. Because I don't feel I would be fulfilled if I don't have children.

Kelly, Interview 1, also described:

> For me, and my partner, having some issues in general about our relationship and what it's going to be in the future, if we don't have kids I think he would be fine with it, and that's not okay for me and that's something that I want in the relationship. I want kids, and have a relationship with him. It's how I view our relationship, I mean, who are we if we don't have kids?

Moreover, Carla, Interview 1:

> I feel that I found out for sure I; it was not even an option for me he would want us to be looking at other options immediately as far as adoption and that type of stuff because he really wants to be a father.

Archival documents reviewed as a part of this study identified the following correlation: "Individuals who experience more infertility-related stress as measured by the FPI may be more emotionally invested in IVF and thus more likely to conceive" (Cooper, Gerber, & McGettrick, 2007, p. 232). The authors go on to elaborate that this provides evidence against the argument that higher levels of stress can hamper the likelihood of conception. The FPI does recognize the specific domains of Need for Parenthood and Relationship concern, which seem to begin to capture these experiences described by participants and archival documents reviewed.

Primary Relationship Stress. The property of *Primary Relationship Stress* appeared through most all archival documents and participants of this study. It is likely to expect that the experience of infertility cause individual as well as relationship stress. However, most measures of relationship satisfaction do not capture the experience of infertility-related stress (Newton et al., 1999).

The property of *Primary Relationship Stress* was described by participants as the degree of stress they experienced with their partner; boyfriend or husband. Gina, Interview 1 described:

> And our marriage has completely centered around that [infertility], it's been a big thing…We talk about that our marriage feels like it been an enormous amount of stress and that we've been on hold.

Later, Gina described her experience of being on bed rest after a cycle of IVF:

> It was not, because he forgot about me. It was 8 o'clock at night and I had to call him and be like *hey dude, you have to be here, and you have to feed me, I can't get up...* Like with the food thing, and he's outside, and he's finishing mowing the lawn. Which I know is his therapy, and his stress reliever, and I know he is taking care of himself, but it is kinda like he needs to be inside taking care of me. . . . but it's like he forgot about me. He's not doing it to make me feel less important, but I am feeling like this is the most important thing.

These repeated patterns of communication, difference in perceived perception, and consuming amount of emotional, mental, and physical energy that infertility brought caused distress on important intimate relationships.

Sexual Stress. Included in the property of *Primary Relationship Stress* is the dimension of *Sexual Stress*. Participants, as well as archival documents reviewed, described the intimate difficulty of timing sexual intercourse as well as maintaining interest in sex. Peterson, Newton and Feingold (2007) found that: "One of the key findings in this study was that subjective anxiety (inability to relax, feeling nervous) and autonomic anxiety (feeling hot, sweating, feelings of indigestion) were significantly related to sexual stress for both men and women." That is, regardless of the type of anxiety and stress experienced, it also contributes to *Sexual Stress*.

The researcher's professional experience lends support that much of stress experienced related to relationships and infertility-related stress can be related to *Sexual Stress* (shift in frequency, enjoyment, purpose, and timing), however this was not as apparent in the data collected from participant interviews in this case study. In reviewing the participant interviews and archival documents reviewed, it seems that the FPI adequately captures stress and concern related to the primary relationship as well as the sexual relationship. Interestingly, participants responded to 8 questions of the 46 that directly asked about feelings related to sexual concern (I find I've lost my enjoyment of sex because of the fertility problem; I feel just as attractive to my partner as before; I don't feel any different from other members of my sex; I feel like I've failed at sex; During sex, all I can think about is wanting a child (or another child); Having sex is difficult because I don't want another disappointment; If we miss a critical day to have sex, I can feel quite angry; Sometimes I feel so much pressure, that having sex becomes difficult). While participants noted that the FPI allowed for reflection on sexual stress; it was not a topic further elucidated by participants of this case study. This might be due to the fact that it was not a large concern for this sample of women, or it could be that participants did not feel comfortable discussing their experience of *Sexual Stress* in this environment.

Concerns about the Future of the Relationship. The last dimension of *Primary Relationship Stress* is *Concerns about the Future of the Relationship*. Through and through, participants interviewed discussed their concerns about the unknown future of the relationship due to the stress related to infertility. At varying degrees, it was captured in all participants. For example, Carla, Interview 1: "I don't know if it's another year from now and nothing's happened if that would be different… I don't, that wouldn't sit well with him." In addition, Gina, Interview 1: ". . . we don't have a lot of together time, so, if we don't have kids and we don't have together time, I don't know." It seemed that participants described an inability to conceptualize how their relationship might change, and in turn their identity within that relationship if they were not able to achieve their key role of parenthood with their partner. For these women in this study, achieving pregnancy in their present relationship seemed to be a tipping point as to whether the relationship would continue into the future.

In terms of the FPI, the measure does present questions that examine the importance of pregnancy and childbirth within a relationship ("Pregnancy and childbirth are the two most important events in a couple's relationship"). This question is a part of the Need for Parenthood domain, which is described as a close identification with the role of parent, parenthood primary or essential life goal. However, this domain does seem to lump the individual *and* couple experience together with questions such as: "Pregnancy and childbirth are the two most important events in a couple's relationship," "It's hard to feel like a true adult until you have a child," and "A future without a child (or another child) would frighten me." which again flattens the dimensionality of the experience described by interview participants – including elements of individual identity as well as relationship functioning.

Social Relationship Stress. *Social Relationship Stress* was a property developed from the data collected in this case study. It is the feeling of pressure to have a child from peers and family, relationships changing because of peers/family members having children, difficulty engaging in social activities such as baby showers and birthdays. This theme was evidenced

in all participant interviews and some of the archival documents reviewed. Gina, Interview 1 describes:

> It feels like when your friends have kids, then you want to, to stay a part of their life…Or, it becomes about things with them and their children, except if you don't have your own it can be not as fun…I think it's hard when you see people, people who are married after you who have kids before you do, or people who are done having kids before you've even started having kids…I mean, I feel left out, because you feel like you are going to grow apart. Maybe that's the hard part.

Here, Gina is described intense social pressure she has placed upon herself to have children to maintain important peer relationships and social status. Simultaneous to trying to become pregnant, Gina described an intense fear she felt she was confronted with if she were to lose these relationships because she did not have the ability to relate as well to her peers since she seems to find herself in a different life stage. Archival documents reviewed also provide support. Galhardo et al. (2013) found that: "In women, perceptions of the self as existing negatively in the minds of others (i.e., external shame) have a direct impact on the perceived stress associated with infertility." This finding demonstrates the impact of concern of perception of others can have on women's experiences of infertility related stress. Another example, described by Carla, Interview 2:

> Or when people say, *oh, do you have children?* You know if you've just met someone or something, and you're like, *No, I don't*. *OK*. Like, if someone asked me why, I'd be, but most people are smart enough not to, you know, dig too deep and that kind of thing.

While she identified that some are smart enough not to dig too deep, she was beginning to allude to the social pressure and norm of asking about family, superficial questions that evoked painful memories and emotions for her.

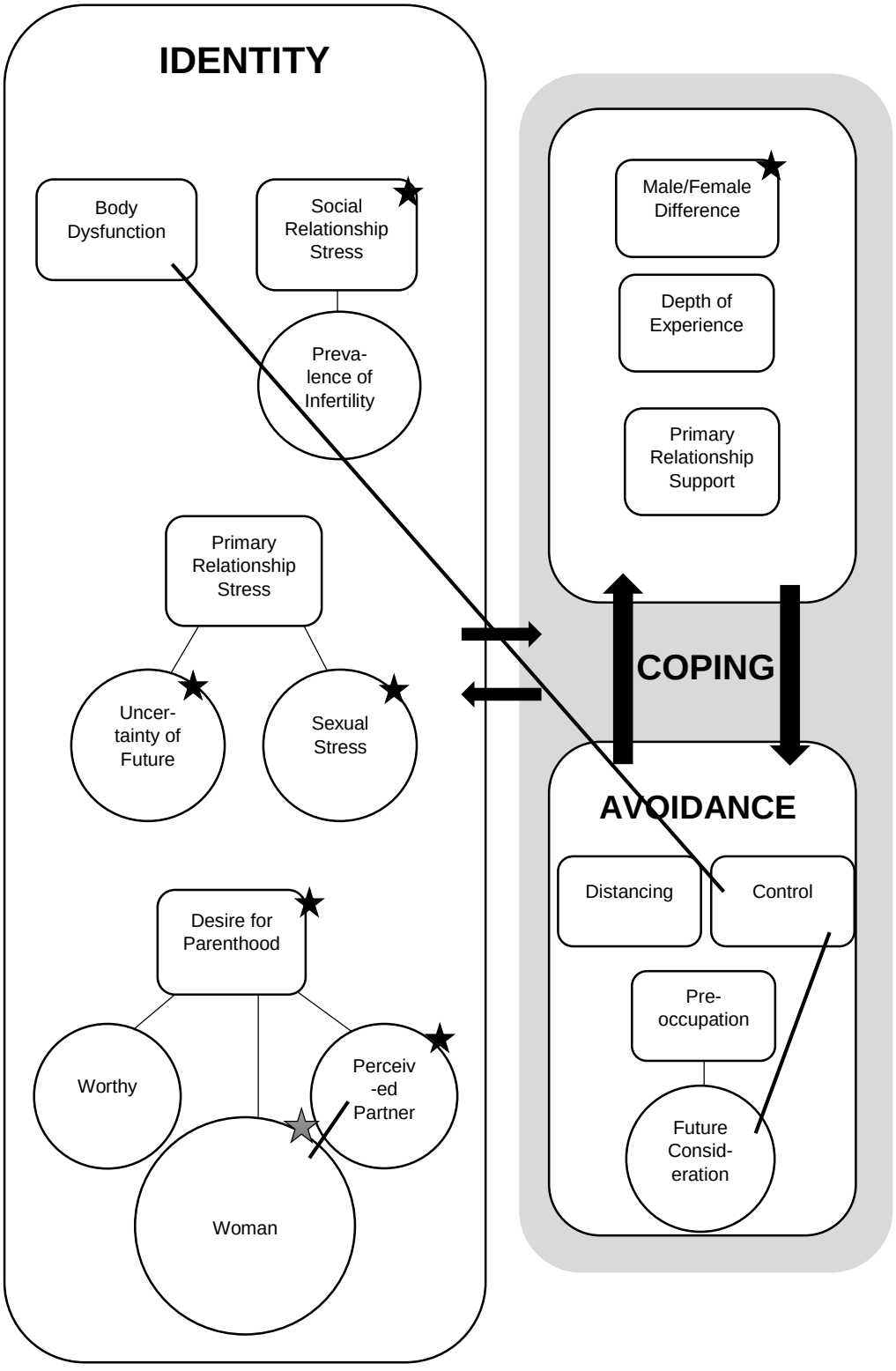
The FPI seemed to adequately capture this general theme adequately through the Social Concern domain. However, it is important to recall that this is one of the primary categories in which Newton et al. (1999) identified that the experience of identity was captured. Adequately addressing the internal impact of infertility-related stress cannot be described by an external comparison construct only.

Prevalence of Infertility. *Social Relationship Stress* also included the dimension of *Prevalence of Infertility*. *Prevalence of Infertility* seemed to be a bi-polar experience for women participants in this study. On one pole, is their own experience of infertility, and the isolation they experienced. Then, on the other pole, was the connections that they had made with others based on their experience of infertility. It was described by participants as a surprised reaction to the number of women encountered who are or who have in the past experienced infertility. Carla, Interview 1 elaborated: "How is that possible? Like how many women I've come across that … and it's not because I'm in a fertility situation with other women on purpose that come together." This dimension highlighted the impact of the taboo topic of discussing infertility has. That until a woman began to seek out connection; she did not realize that her coworker or good friend could be having the same experience. *Prevalence of Infertility* or the impact of making connections with others who have experienced infertility is not clearly addressed by the FPI.

Model

A model for describing the experience of infertility-related stress was generated and compared to the five domains of infertility related stress proposed by the FPI. Figure 1 illustrates a visual representation of the categories, and their underlying properties and dimensions that emerged from the essence of the interviews and archival documents analyzed as a part of this case study to describe how women experience the FPI as a measure of infertility-related stress.

Figure 1. Model describing how women experience the FPI as a measure of infertility-related stress.



Of note, are the items that are starred: these items seem to be supported by the domains and research of the FPI. That is, they seem to be accurately captured by the FPI. The remaining Categories, Properties and Dimensions lack description through the measure of the FPI. The lines connecting properties, categories and dimensions reflect the relationships of the items. The thickness of the line depicts the strength of the code relationship. Next, through the process of member checks, the model was further developed in order to describe the interaction of the domains. This model, as described by participants, includes the identification that *Avoidance* and *Hope*, are in fact ways of coping with infertility-related stress. Participants identified that *Avoidance* and *Hope* can occur at the same time and sometimes overlap. Kelly described:

> Sometimes I use hope to keep moving forward and stay positive, and then other times I use logic to avoid painful emotions. Then, there are times where I use components of hope to avoid, so there is an interaction there where they can occur at the same time.

Further, both Kelly and Gina identified that how they are coping has a direct impact on *Identity*. For example, Kelly described the equation of her identity including *Worthy of Parenthood* plus *Hope* equates to progress and willingness to move forward; on the contrary *Worthy of Parenthood* plus *Avoidance*, equals resistance, denial, and stagnation in her infertility journey.

Discussion

An important category that emerged from the data that surprised this researcher was the category of *Hope*. This seemed to capture the experience of positive stress associated with infertility-related stress. Lazarus and Folkman (1984) emphasize that the outcomes of stress can include negative and/or positive stress experiences, which is what participants and archival documents revealed in this category. In this research, *Hope* encompassed the strength and support that participants identified within their infertility journey, including learning more about their partners, new ways to manage conflict, revitalizing relationships, connecting with other women who experience infertility in supportive ways, and feeling validated that men's and women's experiences of infertility-related stress are in fact unique and different.

Much of the literature reviewed as a part of this research focused on the negative associations of stress related to infertility. It was not until reviewing the research as a part of the test development for the Infertility Self-Efficacy Scale (Cousineau et al., 2006) did the notion of the FPI having a problem-centered focus become realized. Of interest, participants thoroughly described their experiences of *Primary Relationship Support* in their first interview; however, they did not describe this in their second interview, after they had received the results of the FPI. Cousineau et al., (2006) noted that the domains of the FPI are primarily problem-based, and not resource-based. Perhaps in this case study, participants were not being asked questions about how well they are coping, but instead, how poorly they are functioning. Relationship support, including components of dyadic satisfaction and relationship cohesion, has been found to be a large factor in diminishing the experience of infertility-related stress (Galhardo, Pinto-Gouveia, & Matos, 2013).

Another category that emerged from the data analysis was *Avoidance*. The emergence of this category surprised the researcher, as literature reviewed using the FPI were not investigating availability or use of coping resources but rather the existence and severity of stress. Revisiting Lazarus and Folkman's (1984) Transactional Stress Model, it seems that it is insufficient to describe one's experience of stress without also concurrently understanding the interpretation and availability of resources as the two are mutually dependent. As the first author conducted this research, and also recognized her professional history of practicing as a

mental health counselor, she experienced an intuitive sense of circumvention emitted from participants as she engaged in dialogue with participants around infertility-related stress. It seemed that as participants got close to emotional content, they would practice logic, shift topic, or use humor to lighten the experience.

Following the delivery of the FPI results with participants there was a strong shift on the focus of *Social Relationship Stress, Depth of Experience, Future Considerations* and *Control*. These categories were much more prominent in second interview and presented a noteworthy shift in the discussion of the experience of infertility-related stress. It seems that after receiving the results of the FPI, participants engaged in conversations that were included in the category of *Avoidance* than any other area. This could be a result of the sensitive emotional reaction to the results of the FPI. These findings support the idea that the FPI directs women as to how they ought to experience infertility-related stress.

The first author was surprised that the direct discussion of *Control* was not outwardly discussed by participants. Rather, it seemed to be a tangential or covert issue. In light of having insufficient internal or external support for coping with infertility-related stress, *Distancing* may be the next safest way to keep moving forward with one's normal tasks of living as well as undergoing infertility treatment. In a time where a woman might need more social supports than ever, research has shown that social coping resources and growth-fostering relationships, such as family and partner support, significantly decreased an individual's experience of infertility stress (Gibson & Myers, 2002). Behaviors related to *Avoidance* often included attending fewer social interactions (Gerrity, 2001), perpetuating the experience of internal and external isolation.

None of the information developed from this research in relation to *Avoidance* is corroborated by the FPI, its structure and administration, or its domains of defining infertility-related stress. The FPI is also lacking in appraisal of coping while also measuring for stress if it were to follow a validated model of stress, such as Lazarus and Folkman's (1984) Transactional model.

Most prominently, the category of *Identity* emerged from the data. This category, along with its properties, encompasses a woman's experience of themselves; internally as well as how they interpret their experience of themselves externally. While Newton et al. (1999) posited that an individual's identity was accounted for within the Social Relationship domain of the FPI, it is evident that the identity of the woman exists beyond the constraints of those who define them socially. For instance, there is the consideration the property of *Body Dysfunction*. Women interviewed in this research expressed concerns about who they were as women if their quest to parenthood was to be interrupted by their own dysfunctional female body. Participants wondered why their friends, their relatives were so easily able to conceive and carry children, and what their how their own worth would be measured they could not carry children and fulfill their dreams, too. Earlier research reviewed as a part of this study also described the impact of self-esteem and perceived health as protective factors of reduced experience of infertility-related stress (Schneider & Forthofer, 2005). Perhaps higher levels of self-esteem can serve as a protective factor in the exacerbation of infertility-related stress.

Also, take for consideration, a property of *Identity*: the *Desire for Parenthood*. This property described the large component of a women's identity that was consumed with becoming a parent. When this failed milestone interrupted their lives, women began to question their worth, their spiritual roots, their value and contribution to their community. What is missing in our traditional education is the opportunity for young girls to understand that our body's health can also affect our ability to become pregnant and carry a baby to term. Our Western social perpetuation of the mind and body disconnect leave young women lacking the needed resources to cope with infertility-related stress. Our bodies are not just tools that allow us to do the things we do, they are the very precondition for life.

The evidence of the impact of infertility-related stress on a woman's identity is the difficulty in finding support related to the socially taboo topic of infertility. All participants in this research spoke about others they had found who had experienced infertility, but not first without experiencing some degree of isolation. Infertility is one of the most stressful experiences a woman faces in her life (Freeman et al., 1985). A professional and societal acknowledgement of the degree of the stress found in the results of this case study allowed for the reconceptualization, redefinition, and increased understanding of women's experiences of infertility-related stress.

Taken further, a shift occurred as interviewees received their FPI results in between the first and second interviews: As participants were either validated by their results, that yes, their experience exists as a domain of infertility-related stress, as defined by the authors of the FPI; or their experience was not validated by a domain included in the FPI – women's descriptions of their experience of infertility-related stress shifted. These notable shifts between the first and second interview made the first author realize that the depth and subjectivity of the experience of infertility-related stress was being shaped and defined by a measure that lacked relevance to women.

What became obvious to the researcher at the midpoint of research through the process of recording memos was the heteronormative focus of the FPI. Questions that probe about *Sexual Stress* such as "During sex, all I can think about is wanting a child (or another child)," or "Having sex is difficult because I don't want another disappointment," or "If we miss a critical day to have sex, I can feel quite angry." These questions address points of stress that a male-female partnership may experience, however they fail to capture the experience of same-sex couples. While this is a response inventory, there may be a way to measure sexual stress without excluding same-sex couples.

Recommendations for Practice

The findings from this study provide important information for professionals treating women experience infertility in medical and mental health care environments. The current study provides insight into understanding how women experience the FPI as a measure of infertility-related stress. Resonating from the voices of the interview participants, and the voices of women participants from archival documents, is the overwhelming notion that infertility-related stress is a concept that has been misrepresented, misunderstood, and minimized. Professionals serving women need to be informed to prevent future harm to client, patients and consumers.

First, until a thorough measure of infertility-related stress exists, quantitative measures of infertility-related stress, such as the FPI, must be used with caution. For example, the evidence of the flattening dimensionality of the participant interviews provided important demonstration for professionals that administering and delivering the results of a quantitative instrument can in fact detract from, flatten, and devalue a participant's experience. For those whose profession requires the documentation of quantitative symptomology, consider the best practice of multiple measures of assessment, and not relying on the use of the FPI alone. Professionals who may wish to assess infertility-related stress may use the FPI along with a qualitative interview that expands upon important themes addressed in this research, such as a woman's strengths, coping, supports, and identity.

Resoundingly, women described their experience of infertility-related stress as also having some strength-building experiences for them. In this research, women's relationships while simultaneously experiencing stress, experienced growth. Helping women recognize how their partnerships have successfully resolved conflict or offered support to each other in the face of stress can instill *Hope* for the strength to continue to do so in the future as infertility

journeys progress. Further, this strength-based approach is empowering in an all-too-disempowering setting that infertility treatment can exist. Providers might also consider discussing a brief model of stress, such as Lazarus and Folkman's (1984), so that there is a visual representation of our natural responses to stress, such as infertility.

Medical professionals working with women experiencing infertility benefit their practice and their patients by partnering closely with a specialist in women's mental health care. More importantly, those working with women experiencing infertility-related stress must recognize the multidimensional experience it includes. Referring back to earlier literature which placed emphasis on the experience of women feeling stress from the medical environment and the treatment received from doctors related to infertility, specialists in women's health care need to work collaboratively to address the mind, and not only the body, when treating infertility. Offices of physicians and mental health providers that exist separate of each other create a disparity for those in need of service in the moment – of receiving diagnosis, of undergoing testing, of preparedness for future procedures.

Last, aside from important relationships and ways of coping, consider the important components of *Identity* and infertility-related stress. Too often, the transition to parenthood is one that is consciously delayed until a woman feels prepared, however when encountering infertility, this unexpected interruption can cause great stress in how a woman experiences herself, and who she is, and will become. *Identity* is the core understanding of the experience of infertility-related stress and deserves acknowledgement, in order to honor the unique experience every woman has in infertility.

Recommendations for Further Research

Rarely has previous research described women's experience of infertility-related stress qualitatively. Future research of infertility-related stress needs to reflect an examination of:

1. clear definition and construct of infertility-related stress so that it can be clearly and continuously described and defined in the literature,
2. a comprehensive theoretical base for measuring infertility-related stress, and
3. a more thorough assessment technique for understanding infertility-related stress.

The FPI is lacking a theoretical base of a stress theory. The assessment attempted to measure the experience of infertility-related stress, however, it does not explicitly use a theory of stress to describe the experience or guide its design. More specifically, for example, assessment questions intentionally designed to identify and describe the positive and negative responses to stress, as described by the Transactional Model of Stress (Lazarus & Folkman, 1984), should be incorporated. Aside from the lacking in a clear stress model, future research needs to focus on creating an instrument that is validated with women experiencing infertility across multiple settings. Oftentimes, measures of infertility-related stress are normed with samples obtaining ART at an infertility clinic. The use of these convenience samples forgoes the experience of those who do not have access to infertility treatment. Reasons for not obtaining treatment can range from lack of financial resources to going against an individual's religious beliefs. Most of the existing research has been done with participant's who are white, middle to upper class, educated, and able to access financial resources for ART.

Conclusions

This research demonstrated that attempting to describe women's experiences of infertility-related stress through a quantitative measure is precarious. The blind trust to an instrument, such as the FPI, repeatedly in the literature for more than fifteen years with little scrutiny has left gaps in our understanding and treatment of women experiencing significant stress related to infertility. These gaps leave important aspects of women's healthcare unaddressed and are deserving of attention. Although helpful in identifying that women's experiences of infertility are truly stressful, when typical measures of psychopathology such as the BDI and STAI were not measuring, the FPI lacks depth and research in describing the rich experience. Of course, the most important question in this case study was recognized: that the experience of infertility can be truly stressful. It seems that more clarity, diverse research, and social acknowledgment of the phenomena will continue to advance this important women's health issue.

References

American Society of Reproductive Medicine. (2012). *Infertility*. Retrieved from https://www.asrm.org/topics/detail.aspx?id=36

Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report, 13*(4), 544-559. Retrieved from http://nsuworks.nova.edu/tqr/vol13/iss4/2/

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis.* Thousand Oaks, CA: Sage.

Cooper, B., Gerber, J., & McGettrick, A. (2007). Perceived infertility related stress correlates with in vitro fertilization outcome. *Fertility and Sterility, 88,* 714-717.

Cousineau, T., Green, T., Corsini, E., Barnard, T., Seibring, A. R., & Domar, A. D. (2006). Development and validation of the infertility self-efficacy scale. *Fertility and Sterility, 85*, 1684-1696.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Domar, A. D., Zuttermeister, P. C., & Friedman, R. (1993). The psychological impact of infertility: A comparison with patients with other medical conditions. *Journal of Psychosomatic Obstetrics and Gynecology, 14*, 45-52.

Edelmann, R. J., & Connolly, K. J. (1998). Psychological state and psychological strain in relation to infertility. *Journal of Community and Applied Social Psychology, 8*, 303-311.

Freeman, E. W., Boxer, A. S., Rickels, K., Tureck, R., & Mastrioanni, I. (1985). Psychological evaluation and support in a program of in-vitro fertilization and embryo transfer. *Fertilility & Sterility, 43*, 48-53.

Galhardo, A., Cunha, M., Pinto-Gouveia, J., & Matos, M. (2013). The mediator role of emotion regulation processes and infertility-related stress. *Journal of Clinical Psychology in Medical Settings, 20*, 497-507. doi:10.1007/s10880-013-9370-3

Gerrity, D. A. (2001). Five medical treatment stages of infertility: Implications for counselors. *The Family Journal: Counseling and Therapy for Couples and Families, 9*(2), 140-150.

Gibson, D. M., & Myers, J. E. (2000). Gender and infertility: A relational approach to counseling women. *Journal of Counseling & Development, 78*(4), 400-410.

Gourounti, K., Anagnostopoulos, F., Potamianos, G., Lykeridou, K., Schmidt, L., & Vaslamatzis, G. (2012). Perception of control, coping, and psychological stress of

infertile women undergoing IVF. *Reproductive BioMedicine Online, 24*, 670-679. doi:10.1016/j.rbmo.2012.03.002

Gourounti, K., Anagnostopoulos, F., & Vaslamatzis, G. (2010). Psychometric properties and factor structure of the fertility problem inventory in a sample of infertile women undergoing fertility treatment. *Midwifery, 27*, 660-667. doi:10.1016/j.midw.2010.02.007

Greil, A. L., McQuillan, J., Lowry, M., & Shreffler, K. M. (2011). Infertility treatment and fertility specific distress: A longitudinal analysis of a population-based sample of U.S. women. *Social Science & Medicine,* 73(1), 87–94. doi: 10.1016/j.socscimed.2011.04.023

Lather, P. (1986). Issues of validity in openly ideological research: Between a rock and a soft place. *Interchange, 17*(4), 63-84.

Lawson, A. K., Klock, S. C., Pavone, M. E., Hirshfeld-Cytron, J., Smith, K. N., & Kazer, R. R. (2014). Prospective study of depression and anxiety in female fertility preservation and infertility patients. *Fertility and Sterility*, *102*(5), 1377-1384. doi:10.1016/j.fertnstert. 2014.07.765

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping.* New York, NY: Springer Publishing.

Lincoln, Y. S., & Guba, E. C. (1985). *Naturalistic inquiry.* Beverly Hills, CA: Sage.

Lincoln, Y. S., & Guba, E. C. (2000). Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *The handbook of qualitative research* (2nd ed., pp. 163-188). Beverly Hills, CA: Sage.

Maxwell, J. A. (2013). Conceptual framework: What do you think is going on? In *Qualitative research design: An interactive approach* (3rd ed.). Thousand Oaks, CA: Sage.

Moura-Ramos, M., Gamerio, S., Canavarro, M. C., & Soares, I. (2012). Assessing infertility stress: Re-examining the factor structure of the fertility problem inventory. *Human Reproduction, 27*(2), 496-505. doi:10.1093/humrep/der388

Newton, C. R., Sherrard, W., & Glavac, I. (1999). The fertility problem inventory: Measuring perceived infertility-related stress. *Fertility and Sterility, 72*(1), 54-62.

Peterson, B. D., Newton, C. R., & Feingold, T. (2007). Anxiety and sexual stress in men and women undergoing infertility treatment. *Fertility and Sterility, 88,* 911-914.

Peterson, B. D., Newton, C. R., & Rosen, K. H. (2003). Examining congruence between couples' perceived infertility related stress and its relationship to depression and marital adjustment in infertile men and women. *Family Process*, *42*, 59-70.

Reason, P., & Rowan, J. (1981). Issues of validity in new paradigm research. In P. Reason & J. Rowan (Eds.) *Human inquiry: A sourcebook of new paradigm research* (pp. 239-262). New York, NY: John Wiley.

RESOLVE National Infertility Association. (2012). Retrieved from http://www.resolve.org

Schneider, M. G., & Forthofer M. S. (2005) Associations of psychosocial factors with the stress of infertility treatment. *Health & Social Work, 30*(3), 183–191.

Sexton, M. B., Byrd, M. R., & von Kluge, S. (2009). Measuring resilience in women experiencing infertility using the CD-RISC: Examining infertility-related stress, general distress and coping styles. *Journal of Psychiatric Research, 44*, 236-241.

Sexton, M. B., Byrd, M. R., O'Donohue, W. T., & Jacobs, N. N. (2010). Web-based treatment for infertility-related psychological distress. *Archives of Women's Mental Health, 13*, 347-358. doi:10.1007/s00737-009-0142-x

Slade, P., O'Neill, C., Simpson, A. J., & Lahen, H. (2007). The relationships between perceived stigma, disclosure patterns, support and distress in new attendees at an infertility clinic. *Human Reproduction, 22*, 2309-2317. doi:10.1093/humrep/dem115

Stake, R. E. (2006). *Multiple case study analysis.* New York, NY: Guildford Press.

Tufford, L. (2011). Helping couples through the crisis of infertility. *Psychologica, 33*(1), 24-30.

Watkins, K. J., & Baldo, T. D. (2004). The infertility experience: Biopsychosocial effects and suggestions for counselors. *Journal of Counseling and Development, 82*(4), 394-402.

Yin, R. K. (2013). *Case study research: Design and method* (4th ed.). Thousand Oaks, CA: Sage.

Author Note

Staci Born is an Assistant Professor in the Behavioral Sciences Department at Johnson State College in Johnson, Vermont. Correspondence regarding this article can be addressed directly to: Staci L. Born at, staci.born@jsc.edu.

Jennifer Preston is a Core Faculty member in the MA Counseling program at Saybrook University in Oakland, California.

Article Citation

Born, S. L., & Preston, J. J. (2016). The fertility problem inventory and infertility-related stress: A case study. *The Qualitative Report, 21*(3), 497-520. Retrieved from http://nsuworks.nova.edu/tqr/vol21/iss3/5