GIVING A VOICE TO DIVERSE MEN'S EXPERIENCES OF INFERTILITY

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DEDICATION

For my amazing family and husband, Jose Hernandez,

thank you for your never ending patience and love.

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ABSTRACT

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Infertility is the inability to conceive after at least 12 months of unprotected sexual intercourse (Dooley, Nolan, & Sarma, 2011; Kelly-Weeder, 2012; World Health Organization [WHO], 2016). It is estimated that 8-12% of all heterosexual couples, or 80 million people worldwide, are infertile (Leon, 2010; WHO, 2002). Research on infertility has given preference to the experiences of women and couples who seek medical assistance for infertility (Almeling & Waggoner, 2013), while research on infertility experiences of heterosexual men are still rare given that approximately 50% of infertility cases involve men's infertility (Culley, Hudson, & Lohan, 2013; Pacey, 2009). The current study assessed the diverse experiences of eight men through their process of infertility utilizing grounded theory to analyze and establish a theoretical understanding of the experiences. The study found that the experiences of men with infertility differ based upon whether they were diagnosed with male-factor infertility, female-factor, or unknown infertility. Men with male-factor infertility were found to experience a response to diagnosis and treatment which included more avoidance and distancing behaviors in response to distress and emotional pain. Men diagnosed with female-factor or unknown infertility tended to respond to diagnosis and treatment with active coping skills

which sought to find a resolution to the problem of infertility as a means of working to support their wives. Themes that arose among the participants was the impact of societal messages, responses to diagnosis, responses to treatment, impact on relationships, impacts on the self, and recommendations from the men to medical and mental health professionals. Variables which were found to impact men's adherence to the model included racial and ethnic identity, income, access to treatment, and identity development. Clinical implications for the findings of this study and future research directions are also discussed.

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CHAPTER I

INTRODUCTION

Infertility is typically defined as the inability to conceive after at least 12 months of unprotected sexual intercourse (Dooley, Nolan, & Sarma, 2011; Kelly-Weeder, 2012; WHO, 2016). Infertility can also include repeated pregnancy loss from miscarriage, ectopic pregnancy, or perinatal loss (Leon, 2010). It is estimated that approximately 8-12% of all heterosexual couples, or 80 million people worldwide, are facing this medical concern (Leon, 2010; WHO, 2002). In the United States, approximately 12% of the population has impaired fecundity, which is reflective of the global numbers (Center for Disease Control [CDC], 2016). Extensive research has been conducted on the experience of infertility in different fields of study, including psychology, medicine, anthropology, and sociology (Culley, Hudson, & Lohan, 2013).

Research on infertility has given preference to the experiences of women and couples who seek medical assistance for impaired reproduction, while research on the experiences of heterosexual men are still rare even though a considerable number of infertility cases involve men's infertility (Culley et al., 2013). The focus of male infertility research is predominantly directed at preconception concerns and sperm virility, and the emotional and social aspects of conception, pregnancy, and birth are rarely studied (Almeling & Waggoner, 2013). The medical assistance for infertility often begins with a diagnosis of the concern followed by appropriate treatment. However, there

are many limitations to treatment, such as multiple births, and treatment is costly and rarely includes insurance reimbursement (Mayo Clinic, 2014b). The average cost in the United States for one basic cycle of *in vitro* fertilization (IVF) ranges from $12,000 to $15,000 (Internet Health Resources [IHR], 2016). Some fertility clinics may offer financing options to help patients manage the cost of care, but even with this option many individuals cannot afford treatment.

Prior to the diagnosis of infertility, most individuals assume they will be able to have children at some point in their lives if they choose. Because an infertility diagnosis alters this paradigm, many people feel as though they are incomplete after finding out that they are infertile (Leon, 2010). The World Health Organization (2002) cited that the psychological stress endured because of infertility can lead to a rupture in marital partnerships, domestic violence, ostracism, and stigmatization. Individuals and couples managing infertility are known to experience various negative psychological impacts (Dooley et al., 2011) including anger, grief, depression, anxiety, or feelings of isolation, powerlessness, and ruptured sense of self (Greil, 1997; Leon, 2010; Syme, 1997). Fathalla (2002) stated that "the physical and psychological burden the infertile couples are willing to go through, and the financial cost couples are willing to pay if they can afford it, attest to the high ranking of infertility as a perceived burden of disease" (p. 5).

While there are shared impacts and consequences that the heterosexual couple may undergo when experiencing infertility, individuals experience infertility differently based on gender. The biological origins of infertility differ for men and women, and

based on gender socialization, men and women express and experience psychological distress from infertility in unique ways. Women are the most commonly studied and therefore more represented within the literature. Johnson and Fledderjohann (2012) studied the phenomenon of women taking on the identity of being infertile, or medicalized embodiment of infertility. Research has shown that most of the women seeking treatment self-identified as infertile. Motherhood is often considered the epitome of womanhood and women who choose to have children align with societal norms (Bell, 2010). Extending from the norm of motherhood, the medicalization of infertility care, or the movement of seeing infertility as a "disease" with a "cure" (McNaughton, 2015), has helped to maintain the norm of motherhood as a test of womanhood. With these changes, overcoming infertility is now another obstacle in the path of women to show their commitment to being a mother.

Research has consistently shown that women experience distress related to infertility diagnoses. However, this research is disproportionately directed at women's experience while men are a significant portion of individuals experiencing infertility. Of the 8-12% of heterosexual couples facing infertility worldwide (WHO, 2002), it is estimated that approximately 30% to 50% of these cases are due to male-factor infertility (Barnett, 2003; Pacey, 2009). These numbers are estimates, as the exact numbers are unknown. The Center for Disease Control (2016) reported that 12% of individuals in the United States have impaired fecundity, but this number only includes women.

Men and Infertility

Male-factor infertility is often defined as an abnormal result on a semen analysis, which may include concerns such as poor semen quality, low sperm count, no sperm, or possibly abnormal sperm morphology (Hirsh, 2003). While men contribute up to 50% of infertility, in most cases, the woman is seen as the primary patient in infertility treatment and many treatment facilities use the female partner's name for all medical records (Throsby & Gill, 2004). In most relationships, men are seen as passive participants in the process of infertility treatment. This pattern impacts how men engage in infertility treatment and their response to a diagnosis of male-factor infertility. Men with male-factor infertility often discover any medical concerns contributing to infertility within the first 6-months of treatment. In many cases, gynecologists prefer not to complete a physical examination on men extending the period before a diagnosis (Pacey, 2009).

Much of the research completed on men's experiences of infertility has been conducted internationally in many different countries (e.g., Dooley et al., 2011; Dyer, Abrahams, Mokoena, & van der Spuy, 2004; Kumbak, Atak, Attar, Yildrim, Yesildaglar, & Ficicioglu, 2010; Webb & Daniluk, 1999), with very few studies being completed within the United States. Also, many of the studies conducted on the psychological impact of infertility on men have not been published within the past 10 years, minimizing the understanding of men's current experiences. The studies on men's infertility provide some degree of information about men's experiences, but clearly there are gaps within the literature.

The limited available research highlights that many men experience difficult emotions when they find out they are infertile. Men may report feelings of disbelief and devastation (Dooley et al., 2011), a sense of inadequacy, and a lack of masculinity, with a desire to keep these emotional reactions hidden from their partners (Webb & Daniluk, 1999). These feelings may be so extensive that some men rank infertility as the worst event in their lives (Dooley et al., 2011). Feelings of shock and devastation result from many men making assumptions that they would be able to have children and that procreation is the traditional and "right" path for their future (Webb & Daniluk, 1999, p. 12). The psychological impacts of infertility may at times lead to an increased masculine orientation among men (Barnett, 2003). Based on how masculinity is defined and manifested for an individual, infertility can impact the personal sense of being a man and lead to a need to increase other factors which contribute to masculinity, such as a denial of weakness, emotional control, or a dismissal of need for help (Gannon, Glover, & Abel, 2004).

Research highlights the diversity of experiences which men endorse when going through infertility. Each study reflects how men experience some level of distress related to infertility, but often this distress may be misunderstood, as it is compared to the experiences of women (Peterson, Newton, Rosen, & Skaggs, 2006) or measured with instrumentation designed for use with women (Nachtigall, Becker, & Wozny, 1992). Qualitative analyses have shown a more consistent reflection of men's distress by allowing them the opportunity to describe their individual experiences using their own

words (Dooley et al., 2011; Dyer et al., 2004; Nachtigall et al., 1992; Webb & Daniluk, 1999). Describing men's experiences of infertility still shows to be a difficult undertaking as men reflect a complex experience of infertility based upon internalization of the male cultural stereotypes (Dyer et al., 2004).

Traditional views of masculinity often equate virility and fertility with being a man. Because of this definition of masculinity, infertile men are often stigmatized by a perception that they are deficient in a defining part of masculinity (Gannon et al., 2004). Men often minimize or distance from emotional distress as a protective factor in dealing with infertility (Dyer et al., 2004; Peterson et al., 2006; Webb & Daniluk, 1999). Men in these studies also expressed a movement towards emotional control as a means of regaining feeling of masculinity, which may be threatened in the process of managing infertility. Gender socialization for men that emphasizes minimization of emotions can make studying their experiences difficult.

Socioeconomic Status and Infertility

The majority of the research on infertility has been conducted with participants who are actively seeking medical treatment. However, not all infertile men seek medical treatment. Infertility can in and of itself be seen as a class-based diagnosis (Bell & Hetterly, 2014). Many individuals of a lower socioeconomic status may not be able to afford medical treatment or diagnoses for possible infertility, rather the understanding of being infertile may simply come from the realization of not having conceived after having unprotected intercourse. Approximately 90% of individuals who receive infertility

treatments in the United States are White college-educated women (Bell & Hetterly, 2014). However, individuals in poverty and people of color often have a higher reported rate of infertility due to class- and race-specific disparities, such as higher prevalence of sexually transmitted infections and less access to reproductive healthcare (Bell & Hetterly, 2014). Women with up to a high school education report a higher rate of infertility at approximately 14% as compared to their college-educated counterparts with an approximate infertility rate of 12.5% (Bell, 2010). However, I found no research studying the experiences of poor men in relation to infertility. However, men who are able to seek infertility care are not representative of the general population as these men are likely to be over the age of 25, married, have a higher education, and private medical insurance (Hotaling, Davenport, Eisenberg, VanDenEeden, & Walsh, 2012).

Purpose of the Study

The experiences of men facing infertility is the focus of this research study. The research on this population is sparse and inadequate. Many of the studies that include men often explore their experience in conjunction with that of their female partner. The studies that do look at men individually, often compare men's experiences and coping skills to that of women rather than looking at them as an individual experience (Peterson et al., 2006). Furthermore, men who are poor have been completely excluded from infertility research. Understanding men's experience of infertility is important because their distress related to the experience has been shown to negatively impact men, as well

as their partnerships (Peterson et al., 2006), and at times it may contribute to violence, drug use, or extramarital affairs (Dyer et al., 2004).

The purpose of this study is to fill this gap in the research on the experiences of men with infertility. To do this, the experiences of U.S. men from varied backgrounds and demographics were compiled in order to understand the diversity of experiences of men facing infertility. I focused on men of poor socioeconomic status by oversampling this group. I also inquired about the assistance and services available to men, and what men think about the treatment and care of infertility they have received.

Through this research, I created a model of the experience of men enduring infertility, and hope to promote positive changes in the field of infertility care to integrate the needs of the male partner into medical and psychological services. Due to the qualitative nature of this study, I will write using the first-person as the researcher.

Definition of Terms

For the current study, I operationally define certain terms as follows:

- Classism: a division of power based upon one's economic position (Lott, 2012).
- Female-Factor Infertility: the inability to become pregnant, maintain the pregnancy, or carry a pregnancy to a live birth (WHO, 2016).
- Femininity: a specific culture and its expectations for the behaviors and presentation of heterosexual women (Charlebois, 2010).
- Infertility: the inability to conceive after at least 12 months of unprotected sexual intercourse (Dooley et al., 2011).

- In-Vitro Fertilization (IVF): a medical procedure where a fertilized egg is implanted into the woman's uterus (Leon, 2010).
- Male-Factor Infertility: an abnormal result on semen analysis, which may include concerns such as poor semen quality, low sperm count, no sperm, or possibly abnormal sperm morphology (Hirsh, 2003).
- Masculinity: the commonly held understanding of heteronormative male gender roles within a particular culture at a specified time (Gannon et al., 2004).
- Socioeconomic Status (SES): "the social standing or class of an individual or group. It is often measured as a combination of education, income and occupation" (American Psychological Association [APA], 2016, para 1).

CHAPTER II

LITERATURE REVIEW

In this literature review, I cover the existing research on infertility, different treatment options and the psychological impacts of infertility. The specific application of these topics to women and men will be noted, including research regarding how gender, femininity, masculinity and socioeconomic status may impact infertility concerns. I conclude with the rationale for the proposed study as well as a statement of the overall research question. Through this review of the literature, I explore the existing research in order to identify existing gaps in our knowledge regarding men's experiences with infertility; the study is intended to help fill these gaps within the literature.

Infertility and the Psychological Impacts on the Heterosexual Couple

Leon (2010) reported that infertility can include the inability to conceive as well as repeated pregnancy loss from miscarriage, ectopic pregnancy, or perinatal loss. Similar definitions of infertility are used by others (Kelly-Weeder, 2012; WHO, 2016). It is estimated that approximately 8-12% of all heterosexual couples, or 80 million people worldwide, are facing this medical concern (Leon, 2010; WHO, 2002).

Among women, the most common medical causes for infertility include ovulation problems, obstruction of the fallopian tubes, endometriosis, or adhesions in the woman's reproductive tract (Leon, 2010). Factors for men's infertility often include inadequate sperm production or inadequate delivery of sperm to the fallopian tubes (Leon, 2010).

Between heterosexual partners who are attempting to conceive, there may be concerns such as poor timing of or absence of intercourse, infections within the reproductive tract for either partner, immunological barriers to fertilization or implantation, or possible genetic factors, which may impede conception or maintained pregnancy (Leon, 2010). Once a heterosexual couple suspects that there may be an issue related to their fertility, they may seek medical assistance, which begins with a diagnosis of the concern followed by appropriate treatment.

Diagnosis, Treatments and Limitations of Treatment for Infertility

Diagnosis. When a couple decides to seek treatment for infertility, the physician will first work to diagnose any issues which may be impeding conception. One of the first areas which may be investigated is the couple's sexual activities (Mayo Clinic, 2014a). If there are any concerns in this area, the physician may make recommendations to the couple to increase chances of conception.

Among the general population sexual dysfunction is common, with approximately 30% of men and 40% of women experiencing some concern (American Society for Reproductive Medicine, 2015). These numbers are much higher among couples dealing with infertility with approximately 60% of women (Aggarwal, Mishra, & Jasani, 2013) and 58% of men (Bakhtiari, Basirat, & Mir, 2015) facing infertility reporting sexual dysfunction. The sexual dysfunctions which a couple may face can range from problems with sexual response, such as gaining and maintaining an erection, or pain problems, such as contractions in the vaginal walls which make intercourse painful.

The next phase of diagnosis is completing tests specific to each partner to detect any concerns specific to the individuals within the couple (Mayo Clinic, 2014a). This process may take months to complete and often involves uncomfortable procedures and may be costly due to lack of insurance reimbursement. However, in many couples a specific reason for the infertility may not be found during this phase of diagnosis and can be subsequently deemed *unexplained infertility*. Unexplained infertility means that the source of infertility is not able to be detected using available testing procedures (Nguyen, 2014).

Treatments. Once a couple has been properly diagnosed with infertility concerns, one of the first steps recommended by physicians is to prescribe medication (Leon, 2010). One choice would be injectable gonadotropins to assist with stimulation of hormonal production in a man or woman (Leon, 2010). This medication increases the likelihood of healthy development of an egg within a woman's ovaries and correct timing of the release of an egg during ovulation. This medication also increases the count of healthy sperm.

If medication is not effective or if there are more severe medical complications than low hormone levels, surgery may be an option for correction of any anatomical problems occurring within the reproductive tract (Leon, 2010). In some rare cases, both surgery and hormonal supplements may be utilized. If neither of these options are effective, some couples may move to more aggressive treatments, such as assistive reproductive technologies (ART). The most commonly known ART procedure is *in vitro*

fertilization (IVF) which is a medical procedure where a fertilized egg is implanted into the woman's uterus.

In cases which a specific cause of infertility was not detected, unexplained infertility, IVF may be utilized as the optimal treatment earlier in the process (Nguyen, 2014). This is due to the lack of clarity of the cause, a desire to reduce the cost of treatment, and because IVF can often help to pinpoint the source of fertility concerns. Nguyen (2014) addressed that in many cases the source of infertility is found during IVF procedures, such as low egg quality or inadequate embryo development post-fertilization.

Limitations of treatment. With the introduction of infertility treatment, there are a range of different limitations. Beginning with the use of hormone stimulating medications, such as gonadotropins, there is the risk of overstimulation. In women, there is the risk of ovarian hyperstimulation syndrome (National Institutes of Health [NIH], 2016). Men who take testosterone therapy for an extended period of time may have an increased risk of liver failure, noncancerous growth of the prostate, sleep apnea, and increased growth of preexisting prostate cancer (Mayo Clinic, 2014c).

ART has been found to have a stable success rate of around 25% live births per cycle of medical treatment completed (Fathalla, 2002). Many physicians treating infertility opt to implant more than one embryo each cycle to assist in increasing this percentage at the risk of multiple gestations and possible multiple live births. Fathalla (2002) reported that the rate of multiple births with *in vitro* fertilization is around 29%, with most of the multiple births being twins.

Beyond concerns of multiple births, treatment for infertility is costly and rarely includes insurance reimbursement (Mayo Clinic, 2014b). The average cost in the United States for one basic cycle of IVF ranges from $12,000 to $15,000 (IHR, 2016). This cost sometimes includes medications, initial testing and bloodwork, but rarely includes cost of embryo storage which can be hundreds of additional dollars. Some fertility clinics may offer financing options to help patients manage the cost of care, but even with this option many individuals cannot afford treatment. While cost may be a major limitation for seeking treatment, there are also significant psychological impacts of seeking treatment for the couple.

Psychological Impacts of Infertility

The World Health Organization (2002) cited that the psychological stress endured because of infertility can lead to a rupture in the marital partnership, domestic violence, ostracism and stigmatization. Couples managing infertility are known to experience a multitude of different psychological impacts (Dooley et al., 2011). These psychological concerns may include anger, grief, depression, anxiety, or feelings of isolation and powerlessness (Greil, 1997; Syme, 1997). Fathalla (2002) stated that "the physical and psychological burden the infertile couples are willing to go through, and the financial cost couples are willing to pay if they can afford it, attest to the high ranking of infertility as a perceived burden of disease" (p. 5).

Many times while going through infertility treatments, there is also a simultaneous process of grief that the couple and individuals undergo. Kainz (2001)

highlighted that the grief process is a three stage model which begins with “disbelief, denial, and feelings of incompetence, guilt and helplessness” (p. 482). After a couple finds out that treatment was unsuccessful, there is a process of mourning the loss of the potential child and the dreams that they had for their family. The last stage is acceptance in which the couple may come to accept their state of infertility and begin to build other life plans and other means of generativity, such as adoption or volunteering with other children. This model is labeled the infertility crisis and brings to light the mental process of distress which a couple may go through regardless of treatment or other variables (Kainz, 2001). Kainz (2001) noted that there is a strong need for medical professionals and those assisting couples in infertility matters to be aware of this model and the stage that a couple may be in when offering assistance.

Payne, Guinn, and Ponder (2011) argued that infertility should be viewed as a relationship concern, as each partner comes into the relationship with predetermined ideas of how conception should occur. These preconceived ideas about conception that individuals bring into relationships also include ideas about what their partners are thinking, needing, and expecting from them in relation to reproduction. The perceptions of conception and expectations of the partner may impact behavior and emotional responses which may lead to marital discord. Couples who agree that infertility is a mutual extrapersonal stressor and unite as a couple to appraise the situation similarly tend to report lower levels of stress and higher marital satisfaction (Payne et al., 2011).

Leon (2010) addressed conceptualizing infertility as a shared experience not only within a couple, but also among all individuals facing infertility. Based on this conceptualization, infertility is often treated as a shared issue with group therapy, support groups, and generalized counseling. However, while many face similar experiences, the reaction and subjective experience of infertility is unique to each individual and is based on the personal history, resilience, and vulnerabilities of each person. Consequently, individual psychotherapy is an additional option for treating the psychological concerns of individuals facing infertility.

Often, individuals facing infertility, particularly women, report experiencing a rupture in the perceived sense of self (Greil, 1997; Leon, 2010). Prior to the diagnosis of infertility, most individuals assume they will be able to have children at some point in their lives if they so choose. Because this diagnosis alters this paradigm, many people may feel as though they are incomplete after finding out that they are infertile. When people are diagnosed as infertile their view of the world often changes. They may view the world as unjust. Myths about infertility and inadequate emotional understanding from others often leads to decreased self-worth and feelings related to a loss of control, which can often lead to social and emotional isolation (Leon, 2010).

Initially, many physicians and psychologists believed that infertility had a psychogenic basis (Greil, 1997; Leon, 2010). Through the 1980s, this psychogenic model of infertility was the dominant understanding of the inability to conceive (Greil, 1997). This model included ideas such as women being unable to conceive because of internal

resistance to being a mother. Many of the myths about infertility today may have roots in these initial psychogenic beliefs, leading many people to believe that individuals simply needed to change their state of mind or approach to conception rather than considering medical roots. The psychogenic model of infertility can degrade and minimize the reality of the sufferers' experience of infertility and often leads to blaming an individual (Greil, 1997).

The impact of stress on the reproductive system may at times be confused with the psychogenic model of infertility; but as Greil (1997) discussed, stress has biological etymologies such as the hormone release, which can negatively impact the body. Stress has been shown to have a negative impact on reproduction and can often contribute to infertility (Domar, Zuttermeister, Seibel, & Benson, 1992). When stress is a contributing factor to infertility, individuals need assistance with relaxation because the stress has reached the point of a negative biological reaction and the coping skills being utilized are not effective (Greil, 1997). This assistance may include understanding of relaxation techniques as well as training on the biological responses to stress.

The stress of infertility may also impact the sexual relationship between the couple, which can further exacerbate the issue (Yeoh et al., 2014). In a study of couples in Malaysia, Yeoh et al. (2014) found that the quality of the sexuality of one partner predicted the other partner's interest in sexual activity. For instance, the female partner's sexual arousal played an integral role in the male partner's sexual functioning. Conversely, the male partner's emotional intimacy and satisfaction played a key role in

the sexual functioning of the female partner. The marital distress caused by infertility interrupted this cycle and led to sexual dysfunction. The male partners reported feeling a sense of sexual failure and reduced self-esteem because of the infertility, which led to performance anxiety and sexual avoidance. Women reported a decrease in their sense of perceived attractiveness, which had a negative impact on the expression of their sexuality. As a couple, the participants scored low on sexual intercourse frequency, spontaneity, satisfaction, interest and pleasure. In the case of an infertile couple, the act of sexual intercourse may easily become a chore, which is timed by the ovulation cycle, rather than an expression of intimacy and enjoyment (Yeoh et al., 2014).

While there are shared impacts and consequences that the heterosexual couple may undergo when experiencing infertility, individuals may experience infertility differently based on gender. The biological origins of infertility differ for men and women and based on gender socialization, men and women may express and experience psychological distress from infertility in unique ways. Women are the most commonly studied and therefore are more represented within the literature.

Women's Infertility

As noted earlier, among women, the most common medical causes for infertility include ovulation problems, obstruction of the fallopian tubes, endometriosis, or adhesions in the woman's reproductive tract (Leon, 2010). However, there are reasons for infertility among women beyond medical concerns. Considering all of the causes of

infertility, physicians need to complete a thorough diagnosis and treatment plan that takes into consideration the multiple potential causes contributing to infertility.

Female-Factor Infertility: Diagnosis, Treatment, and Limitations of Treatment

Diagnosis. When a woman presents for treatment of infertility, there is a standardized procedure for care and diagnosis (Rowe, Comhaire, Hargreaves, & Mellows, 1993). This procedure begins with a basic assessment of the woman's history, including her history of pregnancy and medical history. Infertility is defined as 12 months of unprotected intercourse which fails to produce a pregnancy (Dooley et al., 2011; Kelly-Weeder, 2012; WHO, 2016). However, when a woman is over the age of 35, the time period of unsuccessful conception is reduced to 6 months. During screening, the physicians will look specifically for any history of illnesses which could lead to or promote infertility, such as pelvic inflammatory disease or endometriosis. One medical condition which may negatively impact fertility is polycystic ovary syndrome (PCOS) (Usadi & Legro, 2012). PCOS affects approximately 10% of all reproductive-aged women and can often contribute to disturbances in ovulation and menstruation. Disorders related to ovulation account for approximately 40% of all infertility cases among women (Kelly-Weeder, 2012).

After the completion of the screenings, the physician investigates the woman's gynecological history and completes a physical examination (Rowe et al., 1993). The physical examination includes investigation of the different systems of the body,

including cardiovascular and endocrine. The exam will also include an examination of the breasts and pelvic area, including the vagina and ovaries.

A hormone test may also be performed to investigate the levels of progesterone. The level of progesterone 5 to 9 days before a predicted menstrual cycle can indicate whether the woman is having normal ovulation (Rowe et al., 1993). Blood levels of progesterone should be greater than 5 ng/ml or urine analysis should show greater than 2.5 ng/24 hours of urinary pregnanediol secretions (Rowe et al., 1993). If the levels of progesterone do not meet these standards, then treatment may be necessary to increase the probability of regular ovulation.

Treatment. One of the first lines of treatment is to introduce medication to manage any conditions found in the diagnosis phase. One of these medications is Clomiphene citrate, an ovulatory stimulant, which can help to induce ovulation by imitating estrogen in women's bodies (NIH, 2015). This is often the first line of treatment for PCOS (Usadi & Legro, 2012) and irregular ovulation. Alternatives to Clomiphene are aromatase inhibitors, which promote the release of follicle stimulating hormone (FSH) assisting with ovulation (Misso et al., 2012). However, aromatase inhibitors are often not introduced unless the woman is seen as resistant to Clomiphene; such resistance is defined as an inability to conceive during six ovulation cycles with the assistance of Clomiphene (Misso et al., 2012).

When a woman with ovulation irregularity does not respond to medications, there are surgical possibilities (Usadi & Legro, 2012). One possibility is laparoscopic ovarian

surgery, in which small punctures are made in the ovary with a needle to help decrease the production of androgens and stabilize the production of luteinizing and follicle stimulating hormones, both of which are ovulation-inducing hormones. This procedure is able to restore ovulation in approximately 50% of women who have the procedure and often improves menstrual regularity.

IVF is one of the last lines of treatment utilized if medication and other surgical procedures are ineffective and is typically the indicated treatment for women who have unexplained infertility (Usadi & Legro, 2012). Researchers disagree on whether this procedure should be utilized as an initial form of treatment. Reindollar et al. (2010) argue, that introducing IVF earlier in the treatment process is a time and money saving strategy. In contrast, others promote the need to expend all other less invasive options prior to opting for IVF (Usadi & Legro, 2012).

Limitations of treatment. Many women may turn to these medical and surgical options when attempting to have a child, however, there are some limitations to many of these procedures. These limitations include medical complications, multiple pregnancies, negative side effects, and psychological impacts. The limitations of different infertility treatments may impact the choices that individuals make and which treatment(s) they pursue.

Rarely do women present to treatment with significant information about infertility treatment options (Hampton, Mazza, & Newton, 2012). Many women attempted to gain knowledge prior to entering into treatment and worked to rectify the

infertility personally using at home conception timing methods. However, in only about 12% of women presenting to treatment are they able to accurately identify the optimal fertility window for women to conceive. Due to this lack of knowledge, women are often heavily reliant on their physicians' treatment decisions and cannot contribute to the decision making.

One of the major limitations of treatment for infertility among women is medical complications. One of the most concerning is the possibility of ectopic pregnancies (Marcus & Brinsden, 1995). Ectopic pregnancies occur when the fertilized egg implants outside of the uterus. This implantation most often occurs within the fallopian tubes and may lead to severe medical complications, such as ruptured fallopian tubes. Among women receiving in-vitro fertilization as a treatment for infertility, ectopic pregnancies occur in 2 to 5% of all pregnancies (Marcus & Brinsden, 1995). This is 1 to 3% higher than the risk among the general population.

One of the next limitations of seeking medical intervention for infertility is the risk of multiple pregnancies. Around 20 to 30% of all in-vitro fertilization pregnancies are multiple pregnancies, meaning that the woman is pregnant with more than one child (American Pregnancy Association, 2016). When women carry more than one child there is an increased risk of complications such as preterm delivery, low birth weight for the infant, gestational diabetes, placental abruptions, fetal death, and an increased need for a cesarean section during labor. *Preeclampsia*, which is high blood pressure during pregnancy, is also very common in multiple pregnancies, with half of all triplet

pregnancies leading to preeclampsia (American Pregnancy Association, 2016). Multiple pregnancies therefore increase the risk that the woman may have a medically complicated pregnancy or delivery.

Along with these other concerns, there are many side effects of treatment. Women often report side effects such as pain and cramping, bloating, sickness, tiredness, aching abdomens, coughing, headaches, sinus pain, and mood swings (Cunningham & Cunningham, 2013). Many women find these everyday side effects of the treatment distressing and side effects may often be a deterrent from choosing to start treatment. One of the most concerning medical side effects which is directly related to infertility treatment is ovarian hyperstimulation syndrome (NIH, 2016). While many of the other limitations addressed have been related to in-vitro fertilization, ovarian hyperstimulation syndrome may develop at any stage of treatment including with medication alone. In ovarian hyperstimulation syndrome the ovaries become swollen (NIH, 2016). The fluid which fills the ovaries may often leak into the belly and chest of the woman. Research reports that around 3 to 5% of women who undergo in-vitro fertilization will develop ovarian hyperstimulation syndrome and that the symptoms range from mild, such as mild pain and abdominal bloating, to severe, such as nausea and vomiting (NIH, 2016).

The last major limitation of infertility treatment is psychological stress. Around 25% of each in-vitro fertilization cycle will result in a live birth (Fathalla, 2002). This statistic highlights that 75% of cases will not result in a live birth after one cycle of in-vitro fertilization. Many women will need to undergo multiple cycles of IVF and may

endure added stress due to the expense of IVF (Mayo Clinic, 2014b). The process of infertility medical care can contribute to and exacerbate stress, but many women may already experience some level of psychological impact based on the knowledge of being infertile without including the strain of medical care.

Female-Factor Infertility: Psychological Impact

Often times, the ability to reproduce is seen as a basic human experience of which all individuals should be capable (Becker, 1994). Thus, when women face infertility, there is often a need for a change in psychological conceptualization and understanding. Women may develop a new infertile self-identity when facing infertility (Becker, 1994). This self-concept usually lasts through the struggles of infertility as infertility often becomes a central aspect of personal identity for these women. In a study of infertile women, Becker (1994) found that many infertile women described their bodies as defective because of the inability to reproduce without assistance.

Johnson and Fledderjohann (2012) studied the phenomenon of women taking on the identity of being infertile. Johnson and Fledderjohann (2012) referred to this as medicalized embodiment of infertility, or "the process through which women's bodies are medically labeled as infertile" (p. 883). In this study, most of the women self-identified as infertile. This pattern was stronger with women who were diagnosed with female-specific infertility or both members of the couple were diagnosed with fertility concerns. When the couple was diagnosed with couple fertility issues, or unexplained fertility issues, the women tended to not differ in the experience of identifying as infertile from

women with female-factor infertility. Johnson and Fledderjohann hypothesized that this was indicative of women taking on the emotional and psychological burden of infertility within the couple. Even women with no medical issues, and no explained reason for infertility, still maintained a sense that the infertility was their fault and that there was something deficient in them; however, this self-identification was much lower than that of women who had been diagnosed with female or couple-factor infertility. With this medicalized embodiment, there can be a deepened sense of being defined by the diagnosis and deeper psychological distress (Johnson & Fledderjohann, 2012).

Research has shown that many women undergo psychological distress when completing treatments for infertility. This psychological distress can manifest as an increase in depression, anxiety, complex grief, or decreased self-esteem (Hynes, Callan, Terry, & Gallois, 1992; Lechner, Bolman, & Van Dalen, 2007). While many women cope successfully with these psychological impacts, some women are at higher risk of psychological distress if their desires for a biological child are particularly strong (Kraaij, Garnefski, & Schroevers, 2009). Leiblum, Aviv, and Hamer (1998) found that women who had successful pregnancies through IVF reported lower anxiety than women who were not successful with IVF treatments, and indicated that women's distress may be tied to personal feelings of success around the treatment outcomes.

Greil, McQuillan, Lowry, and Shreffler (2011) looked at a sample of women in the United Stated to see if the distress experienced by women undergoing infertility treatments was due to the fact that they were infertile and unable to have children, or if it

was more about the treatments themselves. Greil et al. (2011) found that for women who chose to not undergo treatment, the amount of fertility-specific distress did not increase over time. The study highlighted that the treatments associated with infertility were associated with higher distress compared to the distress associated with the experience of infertility alone. These findings show that the treatment for infertility is a stressful experience for individuals distinct from the stress of having been diagnosed with infertility. Even though treatment can be a stressful experience for individuals involved, overall women tend to report a sense of hopefulness while undergoing treatments for infertility (Lechner et al., 2007).

While many women have a sense of hopefulness when undergoing infertility treatments, the outlook a woman has may impact the outcome of treatment. Research has shown that women with pessimistic outlooks on life or negative expectations of treatment outcomes are more likely to experience failed IVF treatments (Bleil et al., 2012). A measure of pessimism found that as women increase in pessimism by one standard deviation above the norm, the odds of failed IVF increased by 66%. While pessimism is often seen as a stable personality characteristic (Bleil et al., 2012), efforts to decrease pessimism may be beneficial in assisting women undergoing IVF treatment.

Sometimes individuals' stress reactions while dealing with infertility is attributed to personality concerns. However, research has shown that there are no significant personality differences between women facing infertility and women not dealing with infertility. A study by Freeman, Boxer, Rickels, Tureck, and Mastroianni (1985) showed

that women undergoing treatment for infertility scored in the normative range on the Minnesota Multiphasic Personality Inventory (MMPI) (Schiele, Baker, & Hathaway, 1943); showing that these women had no evidence of clinical personality or psychological concerns. While women experiencing infertility may not show significant clinical concerns, they often report that infertility was the most difficult emotional experience of their lives and show increases in depression and interpersonal sensitivity (Berg, & Wilson, 1990; Bernstein, Potts, & Mattox, 1985; Freeman et al., 1985). Most women, even with unsuccessful treatments, will adjust childbearing goals by six months post-treatment (Penrose, Beatty, Mattiske, & Koczwara, 2013). Also women who do not successfully conceive through treatments tend to show a decrease in depression by six months after stopping treatment.

Lesbian couples. Both heterosexual women and same-sex couples have significant psychological issues with seeking infertility treatment (Black & Fields, 2014). Approximately 17% of all same-sex couples will seek out infertility treatment, but the course of pregnancy and treatment for a lesbian couple is not the same as that of a heterosexual couple. Lesbian couples looking to have children will face many biological, social, and legal considerations that a heterosexual couple may not. For instance, lesbian women almost always make more intentional decisions around having children, which includes more planning and preparation around having children as compared to heterosexual women. There is a need for a decision around which of the women within the couple will carry the pregnancy to term (Black & Fields, 2014). This decision may be

based on the gender identification of the women, and/or on each one's medical ability to become pregnant and carry a pregnancy to live birth. However, the lesbian couple may also face socialized marginalization and heterosexism, which may induce anxiety for the couple around seeking pregnancy. When deciding whether to seek treatment to conceive, lesbian couples may experience anxiety about how others may react to this decision and pregnancy, and concern for the safety and quality of life for the potential child (Black & Fields, 2014).

Femininity and Gender Roles

Femininity is defined by a specific culture and its expectations for the behaviors and presentation of heterosexual women (Charlebois, 2010). These societal expectations within the United States are characterized by "compliance, dependence on others, cooperative ability, passivity, and conservative sexuality" (Charlesbois, 2010, p. 22). One of the exemplifications of these characteristics and the representation of femininity is the domestic mother, who chooses to stay home and care for children wage-free as a form of social contribution and cooperative passivity (Charlebois, 2010).

Often times, the presentation of femininity is one of the key representations of being a woman (Brownmiller, 1984). There are many expectations for the physical appearance of heterosexual women to present as feminine. One of the main aesthetics which aligns with femininity is youthfulness, or of being within childbearing years. Many women will undergo extreme measures, such as beauty regimens and plastic surgery, in order to maintain this ideal presentation of youth (Marwick, 2010). There are restrictions

and guidelines about the appearance of a woman's body, hair, skin, and clothing which are expected to all align with her identification of her gender as a woman and consequently, her presentation as feminine (Brownmiller, 1984). Often, women may restrict themselves to specific activities which society deems as appropriate in an attempt to not be associated with masculinity rather than femininity. One of the activities which is most associated with being a woman is being a mother and raising children.

Gender roles. Motherhood is often considered the epitome of womanhood and women who choose to have children align with societal norms (Bell, 2010). The *motherhood mandate* dictates that all women must mother, as womanhood is equated with motherhood (Bell, 2009). Current ideals of motherhood often idealize the concept of the intensive mother, or a woman who stays home with her children, is self-sacrificing and child-centered (Bell, 2010). This ideal of intensive mothering can be seen as a mandate on who can be a mother and how mothering should occur (Bell, 2009). Extending from the motherhood mandate and the idealized mother, the medicalization of infertility care, or the movement of seeing infertility as a "disease" with a "cure" (McNaughton, 2015), has helped to maintain the norm of motherhood as a test of womanhood and created a new threshold of infertility as a temporary state of "not yet pregnant" (Bell, 2009, p. 634), rather than a natural state that may happen to any woman (Bell, 2010). With these changes, overcoming infertility is now another obstacle in the path of women to show their commitment to being a mother.

Women often verbalize experiencing early expectations in childhood about the need for fertility and reproductive success (Cunningham & Cunningham, 2013), while women who voluntarily choose to remain child-free are routinely stigmatized (Mollen, 2006). Women are keenly aware that there is a social expectation of what the ideal family should look like, when they should have children, and as they age, a sense of time and fertility running out. Many women address a feeling of being "second rate" (Cunningham & Cunningham, 2013, p. 3431) when they are unable to conceive and perceive a lack of social support and understanding as the ability to have children is attached to others' perceptions of them as women.

The introduction of medicalized treatment for infertility has increased the sense of deviance when a woman is biologically childless (Bell, 2010). It can now be argued that for a woman to receive a social exception from having children and her childlessness to be considered legitimate, her infertility must be "verbally medicalized," or diagnosed as a legitimate medical concern by a medical authority (Bell, 2010, p. 634).

Men's Infertility

Research has consistently shown that women experience distress related to infertility diagnoses. However, this research is disproportionately directed at women's experience while men are a significant portion of individuals experiencing infertility. Of the 8-12% of heterosexual couples facing infertility worldwide (WHO, 2002), it is estimated that approximately 30% to 50% of these cases are due to male-factor infertility (Barnett, 2003; Pacey, 2009). Male-factor infertility is often defined as an abnormal

result on a semen analysis, which may include concerns such as poor semen quality, low sperm count, no sperm, or possibly abnormal sperm morphology (Hirsh, 2003). While men contribute up to 50% of infertility, in most cases, the woman is seen as the primary patient in infertility treatment and many treatment facilities use the female partner's name for all medical records (Carmeli & Birenbaum-Carmeli, 1994; Throsby & Gill, 2004). In most relationships, men are seen as passive participants in the process of infertility treatment. Men are often seen as active only during the phase of conception because of the necessity of sperm; however, men are rarely seen as more active participants by medical professionals and researchers (Almeling & Waggoner, 2013). This pattern impacts how men engage in infertility treatment and their response to a diagnosis of male-factor infertility.

Male-Factor Infertility: Diagnosis, Treatment, and Limitations of Treatment

When there are concerns about conception, a man may be tested for infertility through the assessment of hormone levels, sperm analysis, testicular biopsy, or vasography to test for tubal obstructions (Pacey, 2009). Pacey stated that there are a multitude of different conditions that may contribute to male-factor infertility. Any disease that impacts the functioning of the hypothalamus or the pituitary gland can affect the endocrine signals to the testes and impact the initial reproductive development at puberty. Testicular disorders may impact the amount or quality of sperm production. Lastly, disorders of the seminal ducts or spinal cord injuries may inhibit ejaculation therefore reducing the number of sperm released. Any of these concerns and many other

biological and medical concerns can lead to a reduction in sperm count or release (oligozoospermia), a decrease in sperm motility (asthenozoospermia), or a deformed sperm shape (teratozoospermia).

Within Westernized cultures, infertility is often seen as a biomedical concern (Johnson & Fledderjohann, 2012). In other cultures, there may be other sociological reasons which the population attributes infertility concerns. Dyer et al. (2004) studied the myths and experiences of men experiencing involuntary childlessness in South Africa. The participants in the study perceived reasons for their infertility ranged from more medical reasons, such as weak sperm, to more superstitious reasons such as witchcraft and ancestors evoking infertility because of disapproval of the current relationship. Most of the participants thought men's infertility would be more common than women's infertility because women were seen as being born to have children. These differences in perceived source of infertility may impact the openness to seeking support and assistance for the concerns.

Diagnosis. Once men have some indication that there are infertility concerns, there is a need to assess the cause of the infertility (Pacey, 2009). Nachtigall et al. (1992) reported that in many cases men do not seek out infertility treatment with the preconceived idea that they have fertility issues. It is often the case that men have concern over the inability to have children and their partners often initiate seeking medical assistance. Men with male-factor infertility often find out about any medical concerns contributing to infertility within the first 6 months of treatment.

The first step to discovering any underlying medical concerns is in-depth reviews of the patient's medical records, a physical examination and semen analysis (Pacey, 2009). In many cases, gynecologists prefer not to complete a physical examination on men and instead rely on the semen analysis to see if further tests are warranted (see Table 1). If the sperm analysis shows less than 5 million sperm per ejaculation, then often there is a need for genetic testing and physical examinations to rule out medical concerns such as cancer, cystic fibrosis, or genetic mutations. Postponing the physical examination on men can lead to a delayed diagnosis and can harm the man if the medical condition is progressive. Doctors may also review sexual history during the physical examination to rule out sexual dysfunction. Sexual dysfunction, specifically premature ejaculation and erectile dysfunction are more common among infertile men (premature ejaculation: 19%, and erectile dysfunction: 18%) than fertile men (premature ejaculation: 11%, and erectile dysfunction: 8%) (Gao et al., 2013).

Table 1.

Reference Values for Minimum Semen Quality Compatible with Normal Fertility According to World Health Organization (WHO, 2010, p. 223).

Variable	Value	Unit
Volume	1.5 (1.4-1.7)	Ml
pH	> 7.2	pH units
Concentration	15 (12-16)	$x10^6$ per ml
Total number	39 (33-46)	$x10^6$ per ejaculation
Total Motility	40 (38-42)	PR+NP, %
Morphology	4 (3.0-4.0)	% normal forms
Vitality	58 (55-63)	% alive

Treatments. One of the most commonly used means of managing male-factor infertility is through IVF, which includes utilizing multiple sperm to fertilize eggs prior to implanting any fertilized eggs back into the woman (Bhasin, DeKrester, & Baker, 1994). However, when men are facing very low sperm count, motility, or quality, these men can utilize a combination of IVF and intracytoplasmic sperm injection (ICSI) (DeKretser, 1997). ICSI is a procedure in which one sperm is injected directly into the center of an egg therefore fertilizing the egg (Pacey, 2009). When a man does not have any sperm in his semen, then the option most recommended is donor sperm to replace the man's sperm in the procedure of ICSI (Dooley et al., 2011).

Limitations of treatment. The first child born through ICSI procedures was in 1992 (Ringler, 1997). The success of the procedure led to an increase in techniques and innovations to assist with male-factor infertility. ICSI was considered one of the greatest improvements in treatment for male-factor infertility because it offered hope for individuals dealing with some of the most severe cases of male infertility (Ringler, 1997). However, ICSI was then seen as the follow-up option when IVF was not successful. This sequence in treating patients has led to a pattern of not testing men for infertility, but rather just moving into the use of ICSI as a response to the failure of IVF. Ringler (1997) addressed that this is a problematic pattern because men who are not tested early in treatment may be at a higher risk of severe complications from undetected medical conditions, which may impact treatment and create misunderstandings around the causes of infertility. This pattern of not testing men means that suboptimal sperm production

may not be diagnosed until later in treatment after the cause of the sperm decrease has further exacerbated the problem, contributing to more invasive treatments, unsuccessful infertility treatments, and increased cost for treatments.

Male-Factor Infertility: Psychological Impacts

Much of the research completed on men's experiences of infertility has been conducted internationally in many different countries, with very few studies being completed within the United States. Also, many of the studies conducted on the psychological impact of infertility on men have not been published within the past ten years. These studies highlight what we know currently about men's experiences, but leave a gap within the literature.

Research often addresses stress as a contributing factor in infertility for women. Nevertheless, stress may be more of a contributing factor for infertility among men than women (Slade, Raval, Buck, & Lieberman, 1992; Stoleru, Teglas, Ferminian, & Spira, 1993), and has been shown to impact men's sperm production during infertility treatment (Harrison, Callan, & Hennessey, 1987). This research highlights that while stress may not necessarily be the only cause of infertility among men, it is a contributing factor, particularly if the infertility is due to sperm production concerns. The medical field has moved away from the psychogenic model of infertility because of the accusatory aspects of the model; however, they are some psychogenic factors which may impede men's reproduction. Specifically, stress or anxiety can impact a man's sexual abilities and control over erection and ejaculation during intercourse (Irvine & Cawood, 1996). With a

disturbance in either of these sexual functions, the probability of procreation is decreased. While psychological concerns may at times contribute to infertility, there are also psychological impacts when men experience infertility.

Dooley et al. (2011) studied men in Ireland who have been diagnosed with infertility utilizing a qualitative research analysis. Dooley et al. found that men experiencing male-factor infertility reported feelings of disbelief and devastation when they found out that they were infertile. These feelings of devastation were so extensive that the researchers found that some participants ranked infertility as the worst event in their lives. Some men reported feeling a sense of inadequacy and a lack of masculinity related to the diagnosis and stated that there was a desire to not share personal stressors or emotional reactions to the infertility, specifically with their partners.

Kumbak et al. (2010) using a quantitative method, tested the psychological impact of infertility on men in Turkey based on the source of infertility. The results highlighted that men did not differ in psychological impact based upon whether the infertility was due to their dysfunction or their partner's dysfunction. However, men in all groups showed some state-based anxiety related to infertility. The men did not present with clinical levels of depression, but both female and male-factor infertility groups showed similar levels of anger related to the diagnosis of infertility. Kumbak et al. proposed that these findings were due to the relationship between infertility and the social norm of limited self-disclosure present in Turkey where the research study was conducted. Kumbak et al. reported that there is a norm equating infertility with inadequacy within

the Turkish culture and that this often leads to a limitation in talking about the experience of infertility. Not sharing one's personal experience could lead to an increase in anxiety and anger no matter the source of the infertility because infertility is seen as problematic regardless of its origin.

Fairweather-Schmidt, Leach, Butterworth, and Anstey (2014) studied men and women in Australia within the general population using a quantitative method. The researchers randomly sampled individuals and then assessed for infertility experiences and psychological impacts of infertility. Fairweather-Schmidt et al. found that men reported high overall depressive symptoms if they were experiencing infertility compared to female counterparts managing infertility concerns. Fairweather-Schmidt et al. addressed that this sample was overall a younger sample which was also highly educated leading to a lower infertility rate than the normative population and higher treatment seeking behaviors than is reported in other studies. The findings of this study may be indicative of the overall psychological impacts of infertility on men, or just this smaller sample of men who are educated, young and of a higher socioeconomic status.

Nachtigall et al. (1992) interviewed both men and women in the United States who have experienced infertility and assessed the interviews using a qualitative analysis. Nachtigall et al. addressed that the distress experienced by men may be more accurately understood and measured through qualitative analyses because this inductive analysis is less likely to be impacted by cultural bias and because many quantitative measures of infertility distress are designed based upon women's experiences of infertility.

Many quantitative studies find that women experience higher distress related to infertility than men, the researchers hypothesized that these findings come from biased quantitative tests designed to measure the experiences of women. To test this hypothesis, Nachtigall et al. (1992) interviewed 28 couples undergoing infertility experiences. The couples were interviewed together, as men were more open to participating in the research if interviewed with their partners. After the first interview, the men were more likely to participate in solo follow-up interviews. The couples included female-factor infertility, male-factor infertility, and couples where infertility was mutual.

Counter to the findings of many quantitative studies that men experience distresses no matter the source of infertility, Nachtigall et al. (1992) found that men facing male-factor infertility did report higher distress in comparison with men who were facing female-factor infertility only. Specifically, these men reported more sense of stigma as well as perceptions of loss, role failure and loss of self-esteem related to the gender-specific diagnosis. Men managing the stress of female-factor infertility only endorsed a sense of role failure related to the infertility, but did not report significant sense of loss or stigma related to the diagnosis. However, men reported concerns related to stigma regardless if both individuals in the couple were diagnosed with infertility concerns or just the male.

Men diagnosed with male-factor infertility used words such as “disabled,” “emasculated,” “dud,” and “eunuch” to describe themselves in the study (Nachtigall et al., 1992, p. 117). These words were considered to be reflective of the stigma that these

men perceived was related to their gender-specific diagnosis. Men in the study with male-factor infertility reported loss and shock related to finding out that they were infertile and some stated that this led to feelings of disbelief, anger, depression, and helplessness. All of the men in the study with male-factor infertility reported distress over the inability to fulfill their perceived role as a man by procreating, whereas men facing female-factor infertility reported the role failure to be in relation to being an unsuccessful marital partner and their inability to adequately support their spouse through the process of infertility. All but one of the men participating who faced male-factor infertility reported that the loss of self-esteem was related to the loss of perception of potency and the ability to procreate.

Dyer et al. (2004) studied the myths and experiences of men experiencing involuntary childlessness in South Africa using a qualitative method. Most of the participants reported significant psychological impacts of infertility including a sense of sadness, emptiness, and pain. Some of the men reported feeling inadequate and guilty because they could not have children. Many of the men reported a negative impact on their partnership because they felt a need to focus on their wives' psychological concerns without consideration for their own pain and disappointment. This pattern of relating lead to a reduction in open communication and mutual support within the partnership. One man in the study admitted to physical abuse and another man stated that he had an extramarital affair during the time of infertility treatment because of the stress within the partnership. Most of the men endorsed some form of disagreement within the

relationship, but none endorsed feeling that the infertility would lead to separation or the ending of the relationship. Many of the men endorsed that other men may turn to drugs, violence, or other women during infertility to distract from the experience and emotional pain, but could not apply these impacts to themselves. There was a cultural belief among the men in the study that other men were more likely to become abusive towards their female partners when infertility, no matter the cause, was introduced as a stressor into the relationship.

Herrera (2013) researched the way that men perceive their experiences of infertility. Herrera (2013) studied men and couples in Chile and utilized a narrative method to analyze how men described their experiences in comparison to their partners. Congruent with how men are conceptualized in medical care, men often saw themselves as secondary characters in infertility care (Carmeli & Birenbaum-Carmeli, 1994; Herrera, 2013). Some men discussed that since their "biology" was "simpler" than their female partners, they were also emotionally "simpler" and did not experience the infertility with the depth of emotion that their partner experienced (Herrera, 2013). These men equated their participation in treatment with their investment in the process. Because these men had less of a role in the process of treatment, only needing to deposit semen samples, they also felt less invested in the emotional impact of the infertility than their wives. Many of the men in this study told the story of their infertility with their spouses as the main characters and only included themselves in the story as a part of the couple seeking

treatment. This study's findings show the relationship between the medical treatment of infertility and conceptualization men have of their intrapersonal experience.

Working in the US and the UK, Peterson et al. (2006) studied the implementation of coping skills between men and women undergoing IVF treatments using a quantitative analysis which utilized empirically validated measures Peterson et al. found that women preferred to confront the problem directly, seeking social support, accepting responsibility, escaping and avoiding stressors, or positively reappraising the issue. In contrast, men preferred distancing from the stressor, self-controlling, and planful problem-solving as techniques to cope with the stress of infertility. However, both men and women reported seeking social support most often as a coping technique. Men used distancing from the stressor as the second most frequent coping technique. The findings of this study show that men in the US and UK often cope with infertility through "distancing themselves from the infertility, keeping their feelings to themselves through self-controlling strategies and emphasizing plans to solve the problem of infertility" (Peterson et al., 2006, p. 2447). Distancing from the stressor was found to help decrease the stress from infertility for the man, but did not help a couple adjust. Often, distancing from the stressor was associated with a decrease in connection and cohesion within the marital partnership. This coping skill can also lead men to not seek out personal psychotherapy, but rather only attend therapy when it is initiated by the spouse and the couple attends therapy together (Leon, 2010). Often, men only choose to go to therapy as

a show of support to their spouse, and are often seen as resistant to discussing concerns related to infertility.

In a qualitative study completed in Canada by Webb and Daniluk (1999), the researchers studied how men coped with and made meaning of infertility. During the interviews conducted by the researchers, the men in the study reported anticipation and desire to be fathers prior to finding out that they were infertile. These men stated that they assumed they would be able to have children and thought of it as the traditional and "right" path for their future (Webb & Daniluk, 1999, p. 12). During the process of medical treatment, many of these men reported feeling humiliated and shamed by the process and invasive nature of the testing. After the diagnosis, many of the men reported difficulty reconciling the infertility diagnosis with the personal sense of self as a man, which contributed to feelings of anger and depression. These men reported feeling a profound sense of loss around the inability to have biological children, as well as feelings of powerlessness, loss of control, personal inadequacy, and isolation. During the years after diagnosis, many men reported feeling overwhelmed as they worked through all of the possibilities and options related to the diagnosis and a desire to overcome and thrive despite the diagnosis. Many of the men reported a need to reconstruct the painful experience in a positive light and look at how they had been changed positively through the process of infertility.

Misunderstandings and misconceptions about the origins of male-factor infertility, and the psychological impacts of infertility may at times lead to an increased masculine

orientation among men (Barnett, 2003). Based on how masculinity is defined and manifested for an individual, infertility may impact the personal sense of being a man and therefore lead to a need to increase other factors which contribute to masculinity, such as a denial of weakness, emotional control or a dismissal of need for help (Gannon et al., 2004).

The studies highlighted in this literature review model the diversity of experiences which men endorse when going through infertility. Each study reflects how men experience some level of distress related to infertility, but often this distress may be misunderstood as it is compared to the experiences of other groups (Peterson et al., 2006) or measured with instrumentation designed for use with women (Nachtigall et al., 1992). Qualitative analyses have shown a more consistent reflection of men's distress by allowing them the opportunity to describe their individual experiences using their own words (Dooley et al., 2011; Dyer et al., 2004; Nachtigall et al., 1992; Webb & Daniluk, 1999). Describing men's experiences of infertility still shows to be a difficult undertaking as men reflect a complex experience of infertility based upon internalization of the male cultural stereotypes (Dyer et al., 2004). Men in many of the studies cited addressed a minimization or distancing from emotional distress as a protective factor in dealing with infertility (Dyer et al., 2004; Peterson et al., 2006; Webb & Daniluk, 1999). Men also expressed a movement towards emotional control as a means of regaining feeling of masculinity which may be threatened in the process of managing infertility. The gender stereotypical ways that men utilize to help manage feelings of inferiority during infertility

may make studying their experiences of men difficult. Researchers need to consider men's gender role socialization in designing and implementing investigations, as well as in conceptualizing models of how men experience and adjust to infertility.

Masculinity and Gender Roles

Hegemonic masculinity can be described as the commonly held understanding of heteronormative male gender roles within a particular culture at a specified time (Gannon et al., 2004). The commonly held ideal of hegemonic masculinity within the United States includes a "denial of weakness or vulnerability, emotional and physical control, the appearance of being strong and robust, dismissal of any need for help, a ceaseless interest in sex, the display of aggressive behavior and physical dominance" (Gannon et al., 2004, p. 1169). This perception of masculinity leaves little room for the expression of health concerns or engaging with the medical or psychological fields for support or treatment.

Traditional views of masculinity often equate virility and fertility with being a man. Because of this definition of masculinity, infertile men are often stigmatized by a perception that they are deficient in a defining part of masculinity (Gannon et al., 2004). Many men associate the ability to procreate with masculinity and it is less about being a father and more about being able to impregnate their partners (Gannon et al., 2004). Most men live with the perception and belief that once they reach adulthood they will be able to reproduce and have children (Webb & Daniluk, 1999). The birth of the first child is often sociologically and culturally seen as a developmental milestone for men that marks the alteration and development of their personal identities. This milestone can have far-

reaching implications in the lives of men and their interactions with others (Kaufman, 1993).

Many times men who are unable to have biological children have their masculinity called into question by women and other men (Throsby & Gill, 2004). Some people may call into question infertile men's potency and virility and some men may jokingly offer to take the place of the infertile man to help the spouse conceive a child (Throsby & Gill, 2004). Men are often told it is their responsibility to fix the concern of infertility no matter the source of the infertility. Fathering is often seen as proof of masculinity among western societies (Owens, 1982), so men may have their masculinity called into question once they reach an adult age and do not have children. In a study assessing stigma, men's infertility was associated with more social stigma than women's infertility due to the attachment with the core identity of men and the commonly held definition of masculinity (Miall, 1994). Men's infertility was more likely to be associated with sexual dysfunction and impotence than infertility experienced by women.

Men's gender roles. Throsby and Gill (2004) found that infertility for men was considered a major life crisis that led to threats in the individual's sense of masculinity. This threat to masculinity can lead to feelings of personal and sexual inadequacy and may impact men's relationships with their partners. When men find that they are infertile, there is often a reluctance to talk about the experience of infertility and related stressors with the partner (Webb & Daniluk, 1999). This can lead to stress within the partnership and increased discomfort for the partner when she is unable to console her partner

through this stressful life circumstance. The reason most men report not sharing their personal reactions and experiences with their partner is to maintain a supportive and protective position during the more invasive infertility procedures for women (Cousineau & Domar, 2007). Even though many men report a need to support their partners and distance from personal emotional reactions, many of these men face sexual dysfunction, depression, hostility, and guilt (Irvine & Cawood, 1996; Thorsby & Gill, 2004; Webb & Daniluk, 1999). Many men do not discuss these concerns with their partners, nor do they seek out psychotherapeutic services to help manage the psychological impact of the infertility diagnosis.

Gannon et al. (2004) researched the sociological understandings of male-factor infertility and how men's infertility is presented in media sources within the UK. Gannon et al. looked at news articles in newspapers, such as The Times, The Guardian and The Observer between 1992-1998. Gannon et al. found that newspapers often presented men as the responsible parties overall for infertility. One theme found by the researchers was a sense of fertility being in crisis. On the media side, news sources addressed a significant decrease in fertility and reproduction, and much of this decline was presented as a product of a decrease in sperm production among men. Gannon et al. (2004) pointed out that some articles even stated that the decrease in reproductive ability among men would be the cause of the extinction of the human species. Based upon these findings, it is clear that it is seen as the man's responsibility within a heterosexual partnership to impregnate

the female partner and any deviation from this may be seen as a reflection upon the man's ability to be a man.

Socioeconomic Status

The majority of the research on infertility has been conducted with participants who are actively seeking medical treatment. However, not all infertile men seek medical treatment. Infertility can in and of itself be seen as a class-based diagnosis (Bell & Hetterly, 2014). Many individuals of a lower socioeconomic status may not be able to afford medical treatment or diagnoses for possible infertility. Rather the understanding of being infertile may simply come from the realization of not having conceived after having unprotected intercourse.

Socioeconomic Status and Classism

Socioeconomic status. The American Psychological Association (APA) defines socioeconomic status (SES) as "the social standing or class of an individual or group. It is often measured as a combination of education, income and occupation" (APA, 2016, para. 1). SES is an important factor in the development of individuals across the lifespan impacting not only financial access, but also physical and mental health (Saegert, et al., 2006). The American Psychological Association addresses that "examinations of socioeconomic status often reveal inequities in access to resources, plus issues related to privilege, power and control" (APA, 2016, para. 2). The United States is one of the least economically mobile societies when compared to other industrialized nations (Sawhill & Morton, 2007). Much of the fixedness found within the United States is due to

institutional classism which makes movement up through the economic classes difficult and restrictive. Due to the lack of access to resources, many individuals of lower SES will struggle to move out of their class delineations (Lott, 2012).

Classism. "In the United States, one is born into a family that can be identified as working class, middle class, or affluent—divisions that denote and power, as defined by access to resources," which may limit or opening up opportunities to individuals within these divisions (Lott, 2012, p. 650). Lott (2012) highlighted that the difference between socioeconomic status and classism is the inclusion of power. Classism is a division of power based upon one's economic position. Many may face barriers and discrimination based on the position of being poor, or in a low-SES group. However, the experiences of classism may be divided into two types of discrimination, institutional and interpersonal.

The first form of classism people may face is interpersonal classism (Lott, 2012). Interpersonal classism is defined as being composed of negative attitudes of an individual towards a group of people (prejudice), widely held negative beliefs about a group of people (stereotypes), and behaviors which degrade a group of individuals based on personal beliefs (discrimination) (Lott, 2012). The second form of classism is *institutional classism* (Lott, 2012). Lott (2012) defines institutional classism as the reinforcement of social class and low socioeconomic status through the institutional barriers to mobility. This means that many people of lower SES may find limitations to work, schooling, and healthcare, which decrease their access to gaining wealth and social power. These limitations and barriers help to maintain the current social class system and

delineate the class systems. The medicalization of infertility has also created an institutional divide between classes given that the diagnosis and treatment of infertility is often only accessible to wealthier couples (Bell, 2010).

Infertility and Socioeconomic Status

Infertility is often associated with wealthy White women (Bell, & Hetterly, 2014). Approximately 90% of all infertility treatments in the United States are prescribed to White college-educated women. However, women in poverty and women of color often have a higher reported rate of infertility due to class- and race-specific disparities, such as higher prevalence of sexually transmitted infections and less access to reproductive health care (Bell, & Hetterly, 2014). Women with a high school degree report a higher rate of infertility at approximately 14% as compared to their college-educated counterparts with an approximate infertility rate of 12.5% (Bell, 2010).

Disparities exist in the availability of treatment in infertility and the lack of access to fertility treatments could be considered a human rights issue (Callister, 2010). Costs associated with fertility are often prohibitive for individuals living in poverty. Clinics, which offer simplified ART for low income individuals are available in some countries, such as the Sudan and Egypt, but not readily accessible in all areas (Callister, 2010).

With the majority of women receiving medical care for infertility being college-educated White women of a higher SES, it can be argued that the lack of care for women of a lower SES and women of color is fueled by the common stereotypes of such women as welfare queens having too many children (Bell, 2010). This misconception promotes

an idea that women of lower SES are having too many children and children that they cannot care for completely. The poor Black mother is often constructed as uncontrollably fertile, even though these women have higher rates of infertility than wealthy White women (Bell, 2009). The idealized mode of mothering in westernized culture is intensive mothering, which dictates that a woman chooses to be child-centered and stay home to care for her children (Bell, 2010). This is an ideal which is more difficult to attain for a working mother or single mother. These images of good mothers empower some groups of women to reproduce but deter other women from motherhood. When discussing infertility among women of lower SES, the focus is often on the preventable cases of infertility, such as sexually transmitted infections, which are seen as a justification for blame of the individual for the current state of infertility (Bell, 2010). Many women of low SES may experience the implicitly-based eugenic logic in the medical field which may blame them for their cases of infertility, or even work to dissuade women from a lower SES background from having children. These interactions may impact the willingness or desire of these individuals to seek medical care.

Bell and Hetterly (2014) researched the difference in perspectives of infertility health care between high and low SES women and found that women in poverty are more likely to view health care in a fatalistic manner, but that this view of care was protective for the individual. For instance, women from a low SES background often used fatalism as a means to allow them to maintain a sense of hope and optimism when a medical system is not accessible to them. When these women did not have the financial access to

receive infertility care, they presented the infertility as having a reason or purpose behind it, such as being a part of a plan from a higher power. However, women of higher SES only resorted to this thinking when other medical means were unsuccessful.

Many individuals from intersecting identities of ethnic minorities and low-socioeconomic status, may not have access to medical treatments, or may have distrust of medical systems due to long historical regulation of reproduction within these populations (Silliman, Fried, Ross, & Gutierérez, 2004). In response to these systematic patterns of oppression and regulation of reproduction, there is a movement of reproductive justice which promotes autonomy in making decisions about whether to have children and the right to access to make these decisions (Sister Song, n.d.). Therefore, it is seen that choosing to have a child can be seen as a form of activism and political choice among a group which has long experienced oppression.

It is notable that no research examining the impact of SES on men's experience of infertility were found. The researcher attempted to address this important gap in the current study. However, a study completed by Hotaling et al. (2012) found that the men who are able to seek infertility care are not representative of the general population. This study found that men who seek infertility medical care are more likely to be over the age of 25, married, have a higher education and private medical insurance. Men of higher socioeconomic status are also more likely to know more about infertility and treatment options before seeking treatment (Gerhard, Ritenour, Goodman, Vashi, & Hsiao, 2014).

These findings highlight a socioeconomic discrepancy between those seeking infertility medical care and the general population with infertility concerns.

Rationale for the Investigation

The literature reviewed highlights the research in the area of infertility, both from a medical and psychological perspective. The research on this population is sparse and inadequate. Many of the studies that include men often explore their experience in conjunction with that of their female partner. The studies that do examine solely male samples or men's experiences, men individually, often compare men's experiences and coping skills to that of women rather than looking at them as an individual experience (Peterson et al., 2006). Of eight studies I found that investigated the psychological impact of infertility on men, only two were done with a U.S. sample (Nachtigall et al., 1992; Peterson et al., 2006). In this study, I attempted to remedy some of these gaps in the literature by exploring the experiences of U.S. men from varied backgrounds and demographics in order to understand the diversity of experiences of men facing infertility. I also inquired about the assistance and services available to men, and what men think about the treatment and care of infertility they have received.

Research Questions

Based on the literature reviewed and the need to expand research in the area, I explored the following research questions in the study:

1. What are the common experiences of men facing infertility in the US?

2. How do the experiences of U.S. men facing infertility differ based on personal demographics and backgrounds?
3. What kind of support do men who face infertility desire?

CHAPTER III

METHODS

For the current study, I used a constructivist perspective (Ponterotto, 2005) to conceptualize the personal experience of infertility for men. I attempted to create a nomothetic description of the experience of infertility for men, and subsequent theoretical understanding of these experiences (Ponterotto, 2005). I chose this method of study as a means of interpreting the experience of infertility for men because it is important to include the perspectives and voices of the individuals impacted by infertility (Strauss & Corbin, 1994).

Self of the Researcher and Researcher Bias

Within qualitative research, the researcher plays a vital role in the process of inquiry and analysis (Patton, 2015). To help establish credibility for this kind of study, the researcher must process and address any biases or predispositions which may impact the findings. Patton (2015) noted that, "the principle is to report any personal and professional information that may have affected data collection, analysis, and interpretation either negatively or positively" (p. 700). In keeping with Patton's (2015) suggestions for legitimizing qualitative research, this section is a report of my personal and professional biases which may be used as a means of evaluating the credibility of my research and any findings.

The impetus which prompted this research study came from my personal experiences related to men facing infertility. I have family members and friends who have faced infertility as a stressor within their lives. These personal experiences led to my interest in understanding the experience of these men and identifying tools professionals can use to support them.

At the time this study was completed, I was pursuing my doctoral degree in Counseling Psychology. This educational background promotes my constructivist perspective and desire to pursue the individual experiences of the participants as well as the commonalities shared between the participants. My background as a counseling psychology student also leads me to question how professionals can help individuals manage these life circumstances.

Due to my interest in this phenomenon, as well as my desire to research this area of work, I have sought out and read literature and research beyond what my courses or other academic endeavors regarding infertility have required. As a result of my exposure and interest, I have concluded that men are understudied and under-represented within the field of infertility research. This motivates me to expand the research and understanding of the experience of men facing infertility and to help impact the care that these men receive. Much of the research, as well as my personal experiences, highlight a lack of appropriate care and sensitivity in the treatment of these men. Based on my previous research and personal biases, I expected that men with early diagnosis and treatment intervention will experience a threat to their sense of masculinity as a result of

their infertility. Also, I expected to find emotional detachment as a commonly-used coping mechanism for personal reactions to infertility. I anticipated that many of these men would direct attention to the care of their female partners as a means of avoiding personal emotional reactions. I expected the intensity of some of these effects to decrease over time from the early impact of an infertility diagnosis. My hope is that this research will impact the work of various professionals who interact with men facing infertility and create a more responsive care system for these individuals.

Along with my experiences researching infertility, I have had experiences conducting qualitative and quantitative research in a classroom setting as well as on several research teams. Within each of these research experiences, I participated in gathering and analyzing data.

Cross Coder

The cross-coder who assisted with the open coding stage of analysis was also an important aspect in ensuring validity of the study making her experiences and biases also important. During this study, she was pursuing her doctoral degree in Counseling Psychology and had completed courses and research team positions in both qualitative and quantitative research.

Prior to the analysis for this study, the cross-coder stated that she did not have any knowledge about men's infertility. She addressed believing that infertility was largely assumed to be more impactful for women because of the loss of being able to bear

children. Because of her focus on women's infertility, she believed that women have a greater probability of being diagnosed with an infertility issue.

Personally, the coder expressed having had several female friends who had polycystic ovary syndrome which led to infertility concerns. Having these friendships allowed her the space to have conversations with women about infertility, but she had never spoken with men about these experiences. Because of this lack of personal and professional exposure, the coder reported entering the data analysis with a curiosity about the participants' experiences and perspectives.

Participants

Men were recruited to participate in this study who were over the age of 18 through multiple infertility medical facilities or counseling centers, including support groups and online forums, primarily in the Southwest region of the United States. In order to be considered for the study, participants needed to self-identify as a heterosexual male and have previous personal experience with infertility. Participants needed to read, write, and speak English. No other demographic factors were limited (e.g., ethnicity/race, social class).

The number of participants in a qualitative study is often determined once saturation of the data has been reached. Saturation is achieved when no new information is forthcoming and the information being gathered from participants begins to be redundant (Patton, 2015). Given the literature on the topic, it was hypothesized that saturation would be achieved after 12 interviews. Stake (2006) noted that anywhere from

4 to 12 participant interviews would provide the ideal aggregate of data to reach saturation.

To the extent possible, I selected participants for the interview portion of the study based on maximum diversity among the participants, including factors related to race, ethnicity, socioeconomic status, and stage in treatment. This selection process is called a maximum diversity sample; the aim is to capture common themes across a variation of different characteristics (Patton, 2015). Due to the historical lack of representation of men with low socio-economic status, I tried to sample more men within this demographic. Race/ethnicity was also a factor of maximum diversity as emotional responses have been shown to differ across different racial/ethnic identities (Sherrod & DeCoster, 2011).

Research has shown mixed results for whether the source of infertility impacts the emotional reactions of men facing infertility (Kumbak et al., 2010; Nachtigall et al., 1992). Because of these mixed findings, the source of infertility is included in this study as a factor in maximum diversity sampling. I also sampled participants based on the months of infertility treatment they had received because research has shown that medical professionals tend to involve men more in treatment when preparing for treatment interventions (Carmeli & Birenbaum-Carmeli, 1994). The final sampling consideration was the type of infertility treatment received. This was chosen because of the research highlighting the stress certain types of infertility treatment can have on an individual and couple (Greil et al., 2011; Yeoh et al., 2014). Also, there has been a lack of representation

of individuals who have chosen to not undergo medical treatments, or have chosen alternative treatments, such as acupuncture (Hotaling et al. 2012). Because of this lack of representation, this study included treatment type as a factor to assess decisions about treatment. While perfect representation of all these categories was not attainable, a hypothetical model for sampling can be found in Table 2.

Table 2.

Hypothetical Maximum Diversity Sample.

#	SES	Infertility Source	Months of Treatment	Race/Ethnicity	Type of Treatment
1	Low	Self	0-24	Black	none
2	Low	Self	25-48	Latino	alternative
3	Low	Partner	Over 4 years	Asian or Native	Hormones/IVF/ICSI
4	Low	Partner	0-24	White	none
5	Low	Couple or Unexplained	25-48	Black	alternative
6	Low	Couple or Unexplained	Over 4 years	Latino	Hormones/IVF/ICSI
7	Middle	Self	0-24	Asian or Native	none
8	Middle	Partner	25-48	White	alternative
9	Middle	Couple or Unexplained	Over 4 years	Black	Hormones/IVF/ICSI
10	High	Self	0-24	Latino	none
11	High	Partner	25-48	Asian or Native	alternative
12	High	Couple or Unexplained	Over 4 years	White	Hormones/IVF/ICSI

Measures

Initial Data Form

Each participant completed an initial data form that included both demographics and information about infertility. The form was comprised of 20 items. This form included items inquiring about the participants' gender, race, religious affiliation, marital status, socioeconomic status, education, and experiences with infertility (see Appendix A).

Interview

I invited participants who completed the initial data form and met eligibility criteria to participate in an hour-long semi-structured telephone interview. I asked these individuals 12 relatively broad, pre-established questions related to their personal experience of infertility and the impact the infertility has had on them. I used follow-up questions or prompts to increase depth and underscore the personal nature of their responses during the interviews. For example, the first question of the interview was, "What messages do you believe society sends to men who are experiencing infertility?" (see Appendix B).

Procedure

Participants were recruited using a two-stage process. In the first stage, I recruited a large group of potential participants, and completed screening information on them. From this group, I contacted individuals who met specific criteria for the second part of the study, which involved a phone interview.

Specifically, I recruited participants from medical facilities or counseling centers in the Southwest region of the United States. I focused my recruitment on facilities specializing in treatment for infertility, counseling centers targeting patients and treatment providers for infertility, as well as facilities specializing in medical care for individuals of lower socioeconomic status (due to their historic lack of representation in prior infertility research). I provided chosen facilities with both paper flyers (see Appendix C) and a recruitment statement (see Appendix D) to provide to potential participants. These materials advertised the purpose of the study, eligibility requirements, and procedures for engaging in the study.

Participants were directed to a link on the PsychData website where they completed an online Consent Form (see Appendix E) and the Initial Data Form. The online consent form included information about participation in the initial data form online (part 1), the telephone interview (part 2) if selected, and about the review of individual interview findings (part 3). PsychData (2015) hosted these materials. PsychData is an online computer-based system that encrypts and monitors the protection of participants' data. All data gathered through this web-based system is encrypted using 256-bit SSL technology during transmission to minimize risk of interception and readability of data. Once the data was received, I stored it in a secure database that was protected by my personal username and passcode. To protect participants' confidentiality, all identifying information and data from the surveys were maintained in separate databases (PsychData, 2015).

At the beginning of the initial data form, participants were asked if they would like to participate in a phone interview, and if participants agreed to participate, they were given the opportunity to provide a contact phone number and indicate whether I may leave a voice message at the phone number they provided. Participants were estimated to complete the materials in approximately 15 minutes, and they were given the opportunity to exit the form at any point. A list of referral sources were provided at the conclusion of the survey (see Appendix F), which they could print and retain. These referral sources were provided should participants experience any level of discomfort.

I selected participants for the interviews based on demographics which match as closely as possible with the hypothetical maximum diversity sample and eligibility to participate. Once I collected and analyzed the screening data, I contacted potential participants for Stage 2 by telephone. When I called, I described the process of the interview, and if the participant remained willing, I scheduled the interview at a mutually agreed upon time. I then called participants who scheduled an appointment at the agreed-upon time to complete the semi-structured interview, which I approximated to last about an hour. At the beginning of the interview, I informed each participant of time commitments and that they may choose to end the interview at any time. I was in a secure room and conducted interviews on speaker phone. Interviews were digitally audio recorded using a digital voice recorder. After completion of the interview, each participant received a $25 gift certificate through email as advertised on the recruitment flyer. I transcribed the interview recordings after I completed each interview, and then

deleted them from the digital recorder. I placed the transcriptions in a password-protected file, and intend to delete them after the completion of the study. Each interview transcription was identified utilizing a unique participant code, which can only be matched back to the Initial Data Form by me. Data from the Initial Data Form for participants not selected to participate in the interview portion will be destroyed after the completion of the study.

After I analyzed and coded the data from the interviews, I sent individual results to each interview participant as a member check. A member check is a process of triangulation which allows the individual participants to evaluate the "accuracy, completion, fairness, and perceived validity" of the analysis and conclusions made by the researcher (Patton, 2015, p. 668). Participants were asked to review the individual interview analysis and respond within five days if they found any missing or inadequate parts of the results. Of the eight participants, three participants responded to indicate no changes in their responses, and five participants did not respond to the email. The results from the member check showed a response of appropriate analysis of interviews and experiences. Any changes emailed to me were saved in the file with original interview data and destroyed at the conclusion of the study.

Data Analysis

I used a grounded theory methodology to analyze the qualitative data in order to clarify the complexities of the interpersonal dynamics and lived experiences of the participants within their social context (Fassinger, 2005). I maintained thorough memos

and notes as I analyzed data as a means of monitoring my reactions to the data and to document emerging theoretical ideas.

Demographic information from the initial data form were reported only for those selected to participate in the interview. For the current study, I used analyst triangulation to track possible researcher bias using a cross-coder (Patton, 2015). I chose a cross-coder who is familiar with qualitative analysis, but had limited knowledge related to the experiences of men with infertility. The transcripts were coded independently by both a cross-coder and me. The cross-coding process provided a check on the trustworthiness and credibility of the analysis. Both cross-coding and member checks are forms of triangulation, a term for processes of data analysis intended to illuminate possible blind spots or interpretation discrepancies resulting from researcher bias (Patton, 2015). After independently coding, the separate data findings were compared for commonalities and differences (Patton, 2015). Differences were resolved by discussion to consensus.

In keeping with grounded theory procedures, the first stage of coding was open coding. In this stage, the interviews were analyzed for meaning and assigned a label based on the words used by the participant (Fassinger, 2005). When coding, the process was open to altering codes as more interviews are integrated in order to create a cohesive coding system for all of the interviews. I analyzed and integrated the two separate coding systems designed by the coder and cross-coder to create a single coding system for all interviews. This integrated coding system incorporated the integrity of both coding

systems. The cross-coding system was used during the first stage of open coding, but not in the second or third stages of coding.

Once analysis was completed for each interview, the findings for each interview were sent to each of the participants in order to provide a member check on the researcher's accuracy of representation of the experience as suggested by Fassinger (2005). Using this form of triangulation allowed the participants to confirm the interpretation of their interviews and make additional comments to assist in understanding their experiences.

The second stage of coding was axial coding, in which the codes derived from the interviews were grouped together into categories (Fassinger, 2005). In this step of coding I took the open codes and began establishing how groups of codes were interconnected. In this stage of coding, individual anomalies which did not fit into original codes were processed so that code alteration could be made to understand the interconnection of the anomalies with the overall representation of the experience of the participants.

The last stage of coding is selective coding. The goal of this stage of coding is to create an overarching understanding that explains the relationships between the categories established during axial coding (Fassinger, 2005). In this stage, the interconnection of all of the categories was established creating an overall picture of the experience of men facing infertility. Selective coding leads to "plausible relationships among concepts and sets of concepts" that can later be strengthened through further research and validation of the participants (Strauss & Corbin, 1994, p. 278).

CHAPTER IV

RESULTS

This study was designed to assess the experiences of men managing infertility across multiple diversity variables. The following results outline these experiences through commonalities and differences.

Description of Participants

Participants were recruited through medical centers, support groups, and online forums. Multiple participants expressed seeking out the study after seeing the flyer, while other participants were offered information about this study from their wives. Demographic data and semi-structured interviews were completed with eight men who met criteria for the study. All individuals who completed demographic information and met criteria for the study were contacted about interviewing as there was low participation in initial screening process. Of the 15 individuals who completed the initial demographic data form, two individuals (13%) declined participation in an interview, one participant (6.7%) did not complete all required fields within the demographic data form, one participant (6.7%) did not meet criteria of being a heterosexual male over the age of 18, and one participant (6.7%) did not provide a working telephone number for the researcher to contact the participant. The remaining eight participants (53%) were all interviewed. The participants ranged in age from 28 to 44 years old, with a mean age of

35.25 years old. The participants reported their ethnicity as: White, 75% (*n* = 6); Hispanic, 12.5% (*n* = 1); and Black, 12.5% (*n* = 1).

Education levels varied among participants from 14 to 27 years of education, with the mean number of years of education being 18.25 years of education. All participants had completed some years of higher education after completion of their high school degree. Out of the eight participants, four participants (50%) indicated having a yearly available income within a range of $51,000 to $75,000, two participants (25%) indicated a yearly available income within the range of $76,000 to $100,000, and two participants (25%) indicated a yearly available income over $100,000. All participants in the study were of a middle or affluent background limiting the applicability of the results of this study to individuals of lower socioeconomic background.

All participants identified that they were currently married; two participants (25%) had one biological child, one child was conceived utilizing donor sperm, and the other child was conceived after *in vitro fertilization*. A participant (12.5%) stated that he was expecting his first biological child at the time of the interview, and five participants (62.5%) had no biological children. The religious orientations of the participants were the following: Christian, 50% (*n* = 4); non-religious, 25% (*n* = 2); Catholic, 12.5% (*n* = 1); Jewish, 12.5% (*n* = 1).

The experiences of infertility varied among the participants. The duration of infertility ranged among the participants from one year and six months to twenty years with a mean duration of infertility being five years. Out of the eight participants, two

participants (25%) experienced unknown infertility concerns, two participants (25%) experienced infertility originating in medical concerns for their wives, and four participants (50%) experienced infertility that originated in medical or biological concerns that they had. The majority, seven participants, had engaged in medical treatment for infertility and one planned to engage in medical treatments. Table 3 outlines the demographic information for each participant and pseudonyms which will be used for each participant in the results section.

Table 3.

Participant Demographic Information and Pseudonyms.

#	Pseudonym	Infertility	Duration	Ethnicity	SES	Children	Religion
1	Adam	Unknown	3y, 7m	Hispanic	Middle	0	Christian
2	Brad	Partner	1y, 6m	White	Middle	0	Catholic
3	Carl	Partner	2y, 9m	White	High	0	Nonreligious
4	Dave	Unknown	1y, 11m	White	High	0	Christian
5	Eddy	Self	6y, 9m	White	High	0	Jewish
6	Fred	Self	20y	White	Middle	1	Nonreligious
7	Greg	Self	2y	African American	Middle	1	Protestant
8	Hank	Self	1y, 10m	White	High	0	Christian

Results

The experiences of the participants appeared to be contingent upon the diagnosis that the participants received at time of treatment. Many participants addressed differences in the paths to receiving the diagnosis, but all discussed different societal messages that they received before and during the process of treatment. After diagnosis, the men diagnosed with male-factor infertility experienced a process which included engaging in treatment as soon as possible, which often led to internalized emotional

reactions, such as sadness. Once these men began to have internalized emotional reactions, the men reported distancing themselves in their relationships and experiencing alienation. During treatment, many of these men reported limited treatment options available, and feeling that they had no more treatment interventions available to them, most of the men diagnosed with male-factor infertility addressed wanting to stop treatment.

While this was the experience of men with male-factor infertility, the experiences of men with female-factor infertility or unknown infertility differed. Once these men received diagnoses or lack of diagnoses, these men tended to focus on the reaction of their partner in a response which appeared to be empathic and supportive of their partners. Once they had this reaction, these men endorsed feeling that the experience of infertility increased the sense of closeness within their relationships. When the men felt closer and more empathic with their partners' experiences, they would tend to feel more externalized emotions, such as frustration, which would motivate them to focus on practical issues of treatment, such as financial issues or planning for the future of treatment.

The progression of impact on the men with male-factor, female-factor, and unknown infertility, was impacted by different variables, such as ethnic identity, income, access to treatment, and impact of infertility on identity. A model of these interactions is depicted in Figure 1 below. All of the variables which impacted the participants are discussed below within the themes of societal messages, reactions to diagnosis and

treatment, impact on relationships, impact on self, and recommendations. Each of these themes are supported with direct quotes from participants.

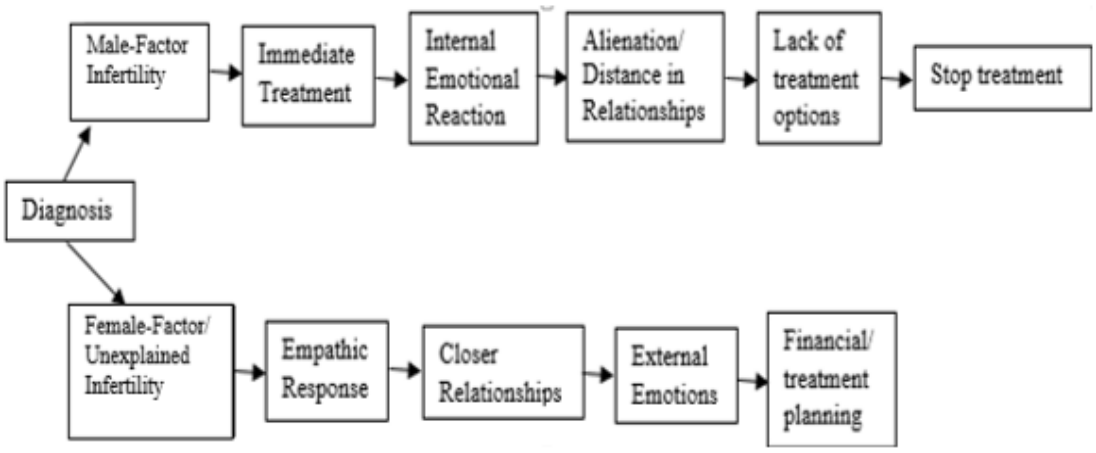

Figure 1. Model of infertility progression based on diagnosis of male partner.

Societal Messages

Positive. Few participants endorsed having positive societal messages about infertility, specifically as it related to men's experiences of infertility. Men who did address receiving positive messages from others stated that these messages came from family or close friends, rather than general societal messages. Carl noted seeing one positive portrayal of infertility in the media, "There was a television show a while back where they actually talked about infertility issues," but expressed a lack of information otherwise. He addressed feeling that this was positive because of the presence of the

issues within a media context for public viewing which would bring awareness and information about the experience.

Negative. Most participants endorsed receiving negative messages from society about infertility. Adam discussed feeling that the message he received about infertility was "just inadequate, you know, like inadequacy. Basically, just not being good enough to do whatever. Not trying hard enough." Greg also received a message of inadequacy stating, "I kind of feel that the first kind of message of less than." Hank stated that society sends the message of "somebody being less than a man…and especially where it ends up being fertility issues related to my difficulty and not my wife's." Carl was also able to remember a depiction of male infertility in the media, "I can't think of any case where specifically depicting or talking about infertility in men, except for in Viagra or something like that, but that is a whole different issue."

The participants also addressed feeling that they received messages, specifically from medical professionals, which minimized their experiences. Greg addressed "the message that is sent is kind of one of indifference. Um, you know, that it really doesn't matter…The message I got there was that I really didn't see why it was such a big deal, especially when there was ART available." Adam also spoke to feeling that medical professionals minimized his experience, "So, I feel like the medical professionals in a way, I guess underplay [infertility]." Greg also spoke to feeling that his experience and concerns were minimized by medical professionals. He described taking his concerns of

depression to his primary care physician, but receiving minimal support for his experience:

> So, when I told [the doctor], I guess the reasons for my depression, he said, "Oh, ok." So, it really was a no big deal message. I was in serious emotional pain and it was as if he didn't care in retrospect, but that is the message I got.

Greg also described seeking medical care through his urologist for a medical condition which could have been impacting his infertility, and he expressed feeling that his concerns were not validated by the physician:

> The year before I got married, I brought another urologist's attention to [my medical condition], and he said, "You know, it's no big deal,"…He didn't know, so he was like, "So what, you have is a varicocele. So what is the big deal? Bye."

Different participants also discussed societal messages related to their gender. Specifically, participants noted messages that infertility was more impactful for women. Yet, the men in this study also clearly spoke about infertility's impact on their sense of masculinity. Greg discussed feeling that fertility is "something that is a fundamental property of masculinity or male-hood, to be able to reproduce" and expressed how that message negatively impacted his beliefs about himself being infertile. Hank expressed a similar message, "the script is that a man is able to have a child, that's just what guys do, eventually have a son or daughter." Carl addressed infertility being "mostly seen as a woman's issue, or if it is seen as a men's issue, it is men supporting their wives" which furthered this societal ideal that typical men are fertile and able to have children,

therefore do not need treatment for infertility. Eddy described his treatment of infertility as involving "a lot more focus on my wife, despite her not really having the issue, and that still being the case today." Even though he was the main cause of the infertility, he experienced the treatment focus to be on his wife, which appeared to be congruent with these societal messages about masculinity and men not experiencing infertility.

Half of the participants also discussed a lack of conversations about men's infertility, or a lack of societal messages. Carl stated this well by saying that "People usually don't talk about infertility in general." His statement outlined the lack of conversations which may send the message that infertility is not a topic of conversations or that it is not appropriate to be discussed. Participants did not report a relationship between messages that participants received about infertility and the participants' reported experiences with infertility.

Reactions to Diagnosis

As participants discussed their experiences with infertility, they also offered varied reactions to their diagnoses. Some of these reactions appeared to be contingent on variables such as the nature of the infertility and ethnicity. The reactions of the participants are outlined below. I also discuss demographic variables which appeared to impact the reactions that participants had to their diagnosis.

Immediate treatment. A quarter of the participants discussed that their reaction to the diagnosis was to engage in treatment as soon as possible. Prior to processing the emotional response, these individuals expressed a sense of urgency in pursuing answers

or specialized treatment to assess options for treatment. Both of these individuals were diagnosed with male-factor infertility. Greg described immediately seeking treatment and further knowledge stating:

> Then immediately of course, I jump into the whole research thing and how many supplements I can take. I actually, that evening made an appointment with the urologist. Which is pretty much what all the reproductive endocrinologists say, is like you need to go see an urologist.

This reaction to immediately choose to complete personal research may have been a response to Greg experiencing minimization from his medical professionals in regards to his concerns about infertility. Considering literature on reproductive justice for individuals of racial minorities, the lack of response from medical professionals appears to be aligned with the research indicating a lack of response to the idea of an African American man being unable to produce children (Silliman et al., 2004). This led to Greg needing to seek out personal research and specialized care as a means of individual autonomy and advocacy for his reproductive care.

Hank also addressed pursuing personal assessment and diagnosis "really quick, probably a couple months I think" after his wife received information from her doctor that she had no medical reason to not conceive. Hank stated "I think there really wasn't much of any wait." Both of these examples expressed that a response to diagnosis is at times a sense of urgency within male-factor infertility to seek a diagnosis confirmation and also to seek possible treatment.

Internalized emotions. Another observed reaction to diagnosis was internalized emotions. The specific emotions addressed were guilt, sadness, loneliness, despair, shame, pain, and disappointment. These emotions were identified as internalized emotions as they were often a response to infertility where the negative emotions were turned inward rather than externalized emotions where negative emotions would be turned outward to a source external to the participant.

Half of the participants addressed feeling a sense of guilt in reaction to infertility diagnoses. Brad and Carl were both men diagnosed with female-factor infertility and addressed feeling guilt as a reaction to discovering that they did not share an equitable distribution of blame for the infertility with their partners. Brad stated that he felt guilt "that we shouldn't have any issues on my end and so then, that was really hard because she feels worse everything is not on both of us." Carl shared a similar feeling with more subtlety by stating that "unfortunately, we also had me tested and I was fine." The word "unfortunately" at the beginning of his statement reflected a sense of misfortune that he discovered that he was not able to also share the burden of infertility with his spouse.

Fred and Hank also expressed feelings of guilt and both of these men were diagnosed with male-factor infertility. Fred stated that he "felt guilty for putting [his] wife through lots of procedures just for the benefit of the IVF treatment." This participant addressed that he was unable to participate in other forms of treatment due to the severity of his infertility diagnosis making in vitro fertilization the only option for possible results,

which meant his wife would have to undergo multiple treatments and procedures to accommodate this treatment option. Hank also expressed feeling guilty, stating:

> This kind of emotional thing, emotional something that hits me in a number of different ways. It usually, just kind of sadness and guilt…So it's kind of waves of guilt that kind of lift over time…It definitely led to, to times where I just keep, just really felt guilty because I felt like I was the one who was keeping us back from the goal that we had as a married couple.

The guilt that appeared to be expressed by the men experiencing male-factor infertility appeared to be an internalized guilt about their role in the infertility, whereas the men with female-factor infertility appeared to express guilt for not being able to share the burden of infertility with their spouse. However, in both situations, it appeared that the guilt that these men experienced was due to a sense of responsibility to manage more of the impact of infertility on the partnership as a whole.

Almost half of the participants, three, addressed feeling sadness as a reaction to infertility. One of these participants was diagnosed with unknown infertility, while the other two were diagnosed with male-factor infertility. Adam, whom was diagnosed with unknown infertility stated, "You know, I think deep down, it would be a little sad knowing that I lived my whole life without a child." Greg expressed this feeling much more simply by stating that when he received the diagnosis of male-factor infertility "it made me really sad." While these men expressed a sense of loss related to their diagnosis, the most salient emotional experience appeared to be that of sadness. Beyond expressing

sadness, Greg also expressed feelings of loneliness. He stated that infertility "is something that can make you feel alone. I feel very alone and like no one understands." This emotional reaction appeared to be an internal reflection of how infertility appeared to impact Greg. Another strong internal emotion expressed was from Adam who was diagnosed with unknown infertility who expressed feeling despair. This participant stated that infertility "has shown me an emotional side of loss and despair because the reality is we might not ever naturally conceive a kid and little by little that realization becomes more apparent." Along with sadness, this experience of despair was presented as a reaction to the reality of how infertility may impact the participant's life.

The internalized reactions of sadness and despair appeared to be more notable for participants of color, Greg and Adam. Based upon literature of reproductive justice, these responses may be indicative of a stronger reaction to the inability to have children in comparison to their White counterparts. This reaction may be not only grief of the loss of potential to have a child, but also the lack of choice to have a child. Within the current cultural communities of ethnic minorities, there is a strong value placed on the ability and choice to reproduce as a means of continuing cultural identities and a form of activism against oppressions. The reality of having these choices removed, even though biological means, may present as a more burdensome and emotional experience for individuals of ethnic minorities.

A participant expressed feelings of shame related not to his diagnosis of infertility, but rather to the resulting treatment. Fred expressed significant shame related

to conceiving a child using a sperm donor stating that after completing the treatment, “I no longer wanted to share any details and worried that my wife had. People who know it’s not my son, I am very emotionally cold to.” This emotional response appeared to be an internalized reaction which reflected the participant’s perception of his not being able to conceive a child through other treatment modalities and therefore resulting in the use of donor sperm to conceive his son. Participants also expressed feeling emotional pain. Carl expressed emotional pain, not at his diagnosis of female-factor infertility, but rather at seeing the emotional pain of his partner. He stated “It has been hard on her. It’s a little heartbreaking for me, but more of my pain is seeing her in pain.” He also expressed feeling disappointment, but minimized it stating “my disappointment is small compared to her heartbreak.” Eddy also expressed feeling emotional pain in response to his diagnosis of male-factor infertility. Eddy expressed that “the big thing to understand is that it is not just painful and difficult, but it can be really frustrating” to experience infertility. He stated that while going through infertility treatment what others did not know about him was that he “was in serious emotional pain” and added, “it still stings a little when I think about it, but it is what it is.” For Eddy, pain seemed to be a strong emotional response to diagnosis in the beginning, but after processing his diagnosis and the impact, this emotional reaction seemed to decrease.

The pattern with the internalized emotions was that they were overwhelmingly represented by men diagnosed with male-factor infertility. In most of the cases, the emotions were only expressed by men diagnosed with female-factor infertility within the

context of reflection on the emotions of their spouse. For men with male-factor infertility, these emotions were strongly represented. Men diagnosed with unknown infertility, also at times addressed feeling internalized emotions, but at a much lower rate than that of men with male-factor infertility. This pattern of internalized emotional responses for men with male-factor infertility could be because the infertility originates in the man leading him to be more internally reflective of how the diagnosis impacts his sense of self.

Externalized emotions. Many of the participants expressed what I have defined as externalized emotions. The emotions represented in this study are annoyance, frustration, being overwhelmed, responsibility, and surprise. These emotions were expressed outwardly toward an external source and led to active coping in response to the emotion. For instance, Dave addressed feeling frustrated at a lack of information and diagnostic clarity from medical professionals which led him to seek out more information or resources.

Half of the participants expressed feeling frustration. Adam stated that in his experience of infertility, the most frustrating thing was not knowing. The lack of diagnosis clarity was experienced as the most frustrating aspect of the infertility process. Participants with male-factor diagnoses as well as those with unknown infertility expressed similar frustrations. Eddy stated, “Therefore, there really haven’t been a lot of solutions which has been very frustrating in general. Sort of being in that position where you know it’s a problem, but there really aren’t really a lot of answers or solutions.”

While this participant had more diagnostic clarity about the source of infertility, his frustration was a lack of clarity on options for managing the infertility.

Another source of frustration, which was expressed by Greg, was the frustration related to the lack of ability to adequately communicate the experience of infertility to others. Greg stated "my point of frustration was that I could never articulate to her why it was so hard for me." He addressed feeling upset that he could not effectively communicate his feelings and experience of infertility with his partner so that she could fully understand him. Two participants expressed that one of their responses to diagnosis was feeling responsible for the outcome. One participant, Brad, was diagnosed with female-factor infertility and stated that he "felt responsible" to provide financially for medical interventions which could possibly help his wife conceive. While Hank, diagnosed with male-factor infertility, stated that he "had a lot of struggles at the beginning with feeling responsible." Therefore, while both men had different diagnoses, they both had a sense of responsibility to manage the impact of the diagnosis.

Half of the participants expressed feeling overwhelmed as a reaction to their diagnosis. Brad stated that he felt very overwhelmed by what he perceived to be his responsibility to pay for treatments for his spouse as she was at the time of the interview pregnant with his child. He stated "the thing is if we don't do it then our child could die, but it's like, I am running out of money and it feels gut-wrenching." Even though he knew his responsibility to provide monetarily for his partner, he expressed a sense of overwhelm in realizing the possible impact of not being able to provide in that way. Dave

also expressed feeling overwhelmed in being supportive to his wife. He stated, “You know, if I have had a long hard day at work, and I come home to an overly emotional wife that I want to be there for, but at the same time, it’s like I am dealing with lots of other things in day-to-day life.” While both of these participants were diagnosed with either unknown or female-factor infertility, Greg expressed similar feelings of being overwhelmed related to his relationship with his partner as he was managing a diagnosis of male-factor infertility. Greg stated, “I have this deal going on and I’m trying to deal with it and I feel like I’m drowning, but I’m trying to keep someone else above water.” Each of these men, no matter their diagnosis, expressed feeling overwhelmed by the multiple responsibilities related to managing infertility and being supportive partners.

The different external emotional reactions appeared to have a consistent pattern related to empathic reciprocity, or a tendency to focus on the partner and being supportive or managing the reaction of the partner. Previous research on men’s emotions and coping point to men’s tendency to use coping techniques such a focusing on the psychological well-being of their partner and controlling their emotional reactions (Dyer et al., 2004; Peterson et al., 2006). These research findings are often seen as problematic as they have been found to negatively impact the communication within the marriage. However, each of these emotional expressions appeared to be a response to the emotional presentation of their partner and what the participant felt would be helpful or supportive of their spouse during infertility treatment and processing. As Greg expressed, there is a sense of feeling a need to “keep someone else above water.” It appears that the men felt

that their emotional responses and focusing on their partners' emotional well-being helped their partners regulate their emotional reactions and subsequently minimized the negative impact of the infertility diagnosis.

These responses may therefore be initially adaptive, as these men respond to the perception of their partners' distress through active coping and pursuing opportunities to change or lessen the impact of infertility on their partner. This active reaction may be complimentary to the partner's tendency to internalize emotions, and therefore may help to maintain progress and functioning in daily life as well as infertility treatments. For example, O'Brien et al. (2009) found that when couples were faced with stressors needed to be navigated as a couple, the couples who utilized empathic responding as a reaction to the stressor had a decrease in the impact of the stress on the individuals within the couple. O'Brien et al. highlighted that empathic responding was a coping skill of one member of the couple seeking to understand the emotions of the other partner and then responding to the affect. This coping skill was presented as an adaptive couple-based coping mechanism as it brought individuals closer within the marital partnership to reflect on the emotional reactions of one another. The participants in my study appeared to be utilizing empathic responses to manage their emotional responses as a way of minimizing the impact of the stress of infertility on their partners and themselves. However, the reactions of the participants to the distress of their partner appeared to maintain gender norms, such as being a financial provider or caretaker of their spouse, rather than deep emotional processing.

Optimism. The majority, six out of eight, of participants expressed optimism as a reaction to their diagnosis. This optimism was presented as a positive perspective of future possibilities, whether that involved having a child or not. Adam expressed optimism that he might have a child in the future:

> I am still relatively young, so I feel like there are so many medical advantages that we have these days that we have not explored yet…so I am optimistic…I am optimistic that I might be able to still have a child.

Adam, an individual diagnosed with unknown infertility, expressed his optimism in terms of his possibility of finding a treatment that would work and allow him to have a child in the future. Fred expressed his optimism in terms of improved treatment options for men like him who have been diagnosed with male-factor infertility:

> I hope that men in my position can conceive through less invasive measures. Research indicated that sperm can be created from pre-sperm cells and if they're present in ejaculation then previously sterile men may be more able to conceive without surgery, as long as these cells are present.

Hank, also a man diagnosed with male-factor infertility, expressed optimism about his future, but that future did not include the possibility of having children.

> I think that as soon as I finish school we are going to travel a lot. That is our plan we had before we started to have kids, we put aside some money and called it a baby fund, and we decided that if we couldn't have kids, we would rename it a travel fund, and that is what we are going to do…I am excited about the potential.

> For our future, just for the way things…I have. I like my life. I like the freedom we have. I like that she can surprise me with a date night every once in a while. And so, there's something nice about, there's something cool about the potential of having kids, but there is something really nice about it and the freedom we have.

Each of these men expressed different hopes for their future based upon their diagnosis, life circumstances, and personal experiences. The majority, six out of eight, of participants in the study expressed some form of optimism about their futures and what may possibly happen. While most of the men expressed this optimism in the form of future oriented thinking, some of the participants were also able to find optimism in the present circumstances through forms of gratitude.

When observing the differences between future-oriented positive thinking versus present-focused positive thinking, I observed that the participants who were able to find positives even in the midst of diagnosis and treatment of infertility were ethnic minority men. These participants expressed gratitude, satisfaction, and thinking about how infertility had helped them to improve. Greg expressed this process of finding gratitude even in difficult circumstances when he stated, "During the whole IVF process and we were very very very blessed because it only took one time, but during that process, that is just a hard period for everybody." So while IVF was a very difficult process emotionally for this participant, he was able to find something to be grateful for in the trials. Adam discussed finding a sense of satisfaction even if that satisfaction does not come with

having a biological child of his own, “I do not need to have my own child to feel satisfied with my life or what is the purpose of life. I think we will get that same satisfaction and some gratitude towards life and helping with adoption.” In this case, he expressed thinking of alternative methods to seek out satisfaction even prior to knowing that he had exhausted all options to have a biological child. Adam and Greg both discussed how they felt that they were improving through the process of infertility. Adam stated, “I actually turned around and tried to eat healthier and work out more.” He stated that these self-care methods were efforts to improve his health and subsequently the chances of having a biological child. Greg stated, “I don’t feel normal, but there are many many ways I am doing better. So you know, it’s not as big as it was.” Greg felt a significant emotional impact from his diagnosis of male-factor infertility, and even though the emotional impact was still present, he was able to find a silver lining by explicitly focusing on the improvements he had made.

In a study completed by Vaughn and Roesch (2003), it was found that positive reinterpretation may be a beneficial coping skill for psychological well-being among ethnic minorities, specifically Mexican-American individuals. It was hypothesized that these may be coping skills developed within the ethnic minority populations in response to a lack of control of environmental and societal stressors and therefore are taught or passed down through socialization. This may be the reason for finding this pattern within my study as each of these three coping responses were expressed by the men of ethnic minority backgrounds and not for White men. White men in the sample instead utilized

more optimism about their future and their ability to overcome the stress of infertility over time.

Loss. In this study, two participants expressed a profound sense of loss as a response to diagnosis. For example, Hank expressed feeling loss at times, "There's definitely a little bit of mourning that I think I probably go through every once in a while." He expressed this as a sense of mourning for the loss of the potential biological child he may have had. For three participants, the loss was a reflection of the loss of control that the infertility created. Brad stated, "For me, I have no way to control or help it other than just monetarily, whatever we can afford." This participant was diagnosed with female-factor infertility and expressed feeling a loss of control in his ability to assist his wife in navigating infertility. Hank, a man diagnosed with male-factor infertility, also expressed a loss of control, "It was one of those things that was kind of, it was out of my hands. I didn't…out of my hands." In this case, he was expressing a lack of control about how to make a difference in his diagnosis of infertility and feeling helpless.

Other reactions related to a sense of loss were uncertainty and feeling that infertility was unexpected. Brad expressed uncertainty about his future when he stated:

> I used to know I could always see a clear picture, get to about 25. But since 25, I don't really know where life is going. This pregnancy has flown by, stress levels have come up and down for me. Day to day, I just feel like I don't have time to think. I can't really tell you what is in the future.

Of the participants, three participants expressed feelings of uncertainty. While Brad expressed uncertainly about his future, both participants diagnosed with unknown infertility expressed uncertainty about the source of the infertility. Additionally, two participants expressed feeling that the diagnosis of infertility was unexpected. Eddy, a man diagnosed with male-factor infertility stated:

> But I am like, this is kind of strange, mostly because it was not something I expected. You know, it is not something that runs in my family. I mean it is not something that I would have ever considered. I didn't have a, I talked to doctors, I don't have any signs that it would have occurred outside of an actual test. So if anything, it was more of a shock than anything else just because it was so unexpected.

This reaction appeared to be feeling that infertility was unexpected and therefore a loss to what the participant felt his life would have been. So while the feelings of what was lost to the participants varied among diagnosis and experience, many participants related in an experience of reacting to the diagnosis with a sense of loss.

Relief. While many participants reacted to the news of diagnosis with negative feelings or reactions, one participant expressed feelings or relief at the time of diagnosis. Eddy stated:

> I mean it was actually kind of a mixed reaction because on one hand, at that point, that was at least information. Whereas, before then, we didn't really know what was going on and then there was at least something finally concrete.

So while he may have had strong negative emotions, he also experienced a feeling of relief that at least he had information about the source of his diagnosis, which eased uncertainty. Greg expressed relief in another situation:

> I was very glad that they did not mention sperm donorship to me. That is one positive thing because I would have not handled it well. But it is part of the parcel that we are just going to work around you.

Greg, diagnosed with male-factor infertility, felt more relief that the medical doctors and his partner did not introduce treatments that he felt would be demeaning or invalidating of his experience. So rather than experiencing relief due to having a confirmed diagnosis, Greg's relief was related to his treatment options.

Participants also had positive reactions to having a confirmed infertility diagnosis when they were already expecting the diagnosis. While the two participants who endorsed this reaction did not frame it as a form of relief, they did express knowledge about the possibility of infertility prior to the diagnosis on previous medical diagnoses. One participant addressed his wife's previous diagnosis of polycystic ovarian syndrome (PCOS), which led to a diagnosis of female-factor infertility for him. Another participant was previously diagnosed with Klinefelter syndrome, a chromosomal abnormality, which led to his diagnosis of male-factor infertility once he began actively trying to conceive.

Determination. One reaction that six of the participants expressed once they were diagnosed with infertility was determination to move through infertility. Dave stated that he and his partner "are not going to give up. We have to exhaust all options first." He

expressed a sense of needing to make sure he and his partner had attempted all treatment options to manage the infertility and possibly conceive a child. This sense of working actively to control the outcome of the infertility treatment was also seen with Greg who stated "I personally just really wanted to fix it." In reference to his diagnosis of female-factor infertility he expressed wanting to change the outcome of the diagnosis. Five participants also expressed a strong desire for a particular outcome, or specific motivation to pursue treatment. Dave stated that "the main motivation is we want children." While two other participants addressed the possibility of biological children being a strong motivator, two participants addressed age being a strong motivator for pursuing treatment when they did. Adam said, "I'm thirty-two and my wife is thirty-two…if we are really serious about this, we need to start now." Because of his and his partner's age, there was a sense of urgency to begin treatment as soon as possible.

Stress. Out of eight, three of the participants discussed stress as a reaction to the diagnosis of infertility and the thoughts about treatment. The experience of stress was described as "constant" and many of the participants also described feeling helpless. One participant addressed feeling that he was constantly ruminating on stressful thoughts related to infertility. Brad stated that infertility is "probably one of the most stressful things I think we've ever had to go through." He later said that:

> Mentally, you're never able to move on. You are stuck. It's like you're just waiting for a plane and they never call your row and you are just watching all these people go by, and no matter how much you spend to try and upgrade, you

are always just sitting there. There's nothing you can do. Even if we wanted to take a break, it is always there.

Greg said:

> I'm going around and around in my head more than is healthy…like whenever I had periods of relief, I would ruminate trying to figure out, trying to get to that special combination of thoughts or masculinization that would make me able to you know, hear infertility stories and be ok.

Difficulty accepting. Another cited reaction was found in two of the participants who also stated that a reaction to diagnosis was that they had difficulty accepting the diagnosis. Both of these participants had been managing the results of diagnosis for longer than other participants. Eddy described the difficulty in the following way:

> I guess there was for a while, it was sort of difficult to come to the realization that it really is my issue…I wasn't really ready to come to terms with that I sort of might be infertile on my own because they said it wasn't addressed. You don't really think of it as a normal kind of thing.

Both of these participants also addressed experiencing reluctance to engage in treatment initially. Eddy highlighted this reluctance with the following story:

> And I had been wavering back and forth about it for probably a good number of months at that point… [my coworker] basically sat me down and asked me why I didn't want the surgery. I didn't have a good answer for it. I just didn't. I wasn't too comfortable with it and didn't want to…he shocked me into realizing the

> thing holding me back sort of. I still to this day don't really know what it was. Whatever it was, it was just not real enough to hold me back, but it did for quite some time. So, I finally had the surgery.

Reaction to Treatment

Beyond the reactions to the diagnosis that participants received, the participants also expressed reactions to the infertility treatment infertility. These reactions were broad, including plans for the future of treatment, financial considerations for engaging in treatment, and wanting to stop treatment. Many of these reactions appeared to be contingent on the participants' diagnoses and financial status.

Plans for treatment. When I inquired about plans for treatment, participants either expressed a desire to continue with medical treatment of infertility, or a desire to pursue other alternatives to treatment, such as adoption or foster care. Half of the eight participants expressed interest in pursuing treatment in the future. Dave described a multi-layered plan for the future management of infertility:

> I mean, we were going through the IUI before we go to the IVF route. We are going to do the maximum our insurance will cover on the IUI and then from there basically it's going to be IVF. And IVF sometimes…they sometimes figure out why things are not working. It may solve the issue from the standpoint that it is not possible for us to have children, as far as any of our own biological children.

This plan included continuing with current treatment as long as it was financially viable then trying more advanced treatments in hopes of either conceiving a child or

discovering that having biological children is not an option. Many of the participants addressed that the plans were contingent on finding out that biological children were not an option. Some of the participants expressed plans for future treatment which seemed to be bound by either a perceived limitation in treatment possibilities, or finances.

When participants addressed some level of limitation in the ability of infertility treatment to lead to biological children, some of the participants addressed adoption as an alternative possibility. Adam stated, "I have personally told my wife that if we're unable to have a child, then adoption would be the next step." This participant also posed the possibility of adopting within the frame of the practical aspects:

> There is a large number of children that grow up without parents, and if we are in a position to spend a ton of money on fertility treatment that might not work or spend the money trying to adopt a child where it's going where there is a child that needs somebody. It's just a matter of going through the legal loopholes.

Half of the participants expressed a desire to possibly adopt, but stated that the limitations which kept them from adopting were finances and limitations within the adoption system. Carl addressed wanting to adopt and researching the possibility to find that he and his partner may not be eligible based on religious differences:

> We have discussed adoption, but we are, we are non-religious and most adoption agencies we are discovering are Christian. We only applied to one adoption agency so far, but they rejected us out of hand, and we think, we don't know this

for sure because they don't give religion as a reason to deny people for adoption, but we are thinking that is why they denied us.

While half of the participants expressed being open to the possibility of adoption, none of the participants expressed a desire to engage in foster care. Beyond this, two participants directly addressed not wanting to seek opportunities for foster care and both stated that this was because of the possibility of losing the child after a time period. Brad described his thoughts as:

> We kind of wanted to stay out of foster care with as much as we have going on. We really couldn't handle the stress of we get it, have our kid for so long, and then, "Oh no, they are going back to their shitty parents." My wife said that is probably the worst part…you never have kids of your own.

When observing the patterns of participants who were open to adoption, I noticed that the individuals who had positive perspectives on possible adoption were participants diagnosed with female-factor or unknown infertility. Regarding opinions about adoption or foster care, most participants diagnosed with male-factor infertility, except for Hank, were not open to adopting.

Finances. Another common theme was thinking about the financial implications of treatment. When observing this pattern, I noted that none of the participants with male-factor infertility addressed financial concerns, other than Hank who expressed a desire for insurance to cover more of treatment. This pattern appeared to be interesting because there were no obvious differences in annual available income between participants with

different diagnoses. However, participants with female-factor infertility and unknown infertility spoke more to financial concerns and burdens related to seeking infertility treatment, including financial uncertainty, working to pay for treatment, and financial support.

Brad spoke to feeling that all financial endeavors were going towards infertility management:

> Just more of, I have pretty much sold…I'd say, I felt responsible to get us set up for this. When I was younger, I had three dirt bikes, a four-wheeler, a jeep, a truck, and jet skis. When we got married, I never really thought about selling off these things, but at this point, it was pay the truck off and sell the motorcycle, and I did that. And now, I am selling the dirt bike. I just don't have the money to dirt bike race anymore and it just pains me to see these things just sitting in my backyard slowly withering away. But, it just, we basically sell off our whole lives, just to try and bring a little one into the world.

While participants from all financial backgrounds spoke to financial concerns, socioeconomic status impacted how they spoke about these concerns. For instance, individuals of middle socioeconomic status spoke more often about selling items at home or taking on another job to earn more money to invest towards infertility treatment. While men from a high socioeconomic background more often spoke to the limitations of insurance to cover treatment options. Individuals of higher socioeconomic status also appeared to be more informed of insurance options and navigating the interactions

between the medical field and insurance. This may be reflective of individuals within a higher socioeconomic status having the finances to afford infertility treatment, which allowed them to focus on getting more assistance from insurance to supplement the cost. Individuals of middle socioeconomic background may have less available income to invest in infertility treatment leading them to focus more on means of earning the necessary funds to continue treatment.

Stop treatment. While some of the participants addressed having plans for treatment or thinking about the financial aspects of treatment, other participants spoke about wanting to stop treatment. Participants who addressed wanting to stop treatment were all participants who were diagnosed with male-factor infertility. Greg expressed this reaction by saying "No, I am done. I'm like done, and as incapable as I am of actually getting the job done, there is an off chance that it could happen, and I don't need for that to happen…because when we were going through it, it made me really sad." Here, Greg is discussing his need to cease seeking medical assistance for treatment of infertility and possible conception because of the emotional impact that treatment had on him. He expressed the sadness that seeking treatment evoked in him and needing an absolute answer that he would not have children in order to regulate this emotional response.

The reaction of wanting to stop treatment also appeared to be related for many to experiences with the need to use a sperm donor. Fred discussed pursuing medical treatment for male-factor infertility which led to the use of donor sperm, after which he began to distance himself from others:

> When we tried to replicate our earlier success, we struggled more and more until we had a sperm donor's baby following my fourth surgery. This ruined many relationships because I no longer wanted to share any details and worried that my wife had. People who know it's not my son, I am very emotionally cold to.

Greg also spoke about stopping treatment because of feeling that he was not the focus of treatment even with a diagnosis of male-factor infertility:

> And they kind of set you to the side. It's like, "We need you to do this [semen analysis] so we can get on to the business or whatever we have to do after we find out what your deal is." "Well there is this problem with [male-factor infertility], and we can actually solve it, but it all has to do with your wife."

Participants addressed feeling that there was a lack of availability in regards to diagnosis and treatment. Eddy stated, "I've been on Clomid, basically the one medication they prescribe for men. There's a lot more available for female infertility than for male infertility. Both in terms of diagnosis and everything." Greg addressed this gap in diagnosis when he said, "And of course, for men, it's only the one test, sperm analysis." Greg also addressed a lack of mental health treatment options for men, "There are groups and there are counseling and group counseling, and they are always female-based."

Impact on Relationships

I also asked about whether participants felt that infertility had impacted their relationships. All participants agreed that there had been an impact on their relationships, but some felt that infertility had positively impacted their relationships, which lead to a

deeper sense of closeness, while others felt a sense of distance or alienation within their relationships as a result of infertility.

Partner encouragement. In regards to their relationships, two participants discussed the impact of their partner encouraging them to seek treatment or information about infertility. Both of these individuals were ethnic minority participants. Adam stated that he learned more about infertility because "my wife, she started going to a women's infertility group and she brought me to one of the meetings." He stated that the experience allowed him to be more reflective of what infertility was and how it has impacted him. Greg stated "it was my wife, this is a common story. My wife was, 'Hey, this is not working. We need to go get checked out.'" It was through this encouragement from his wife that he decided to seek out testing.

Emotional distance from loved ones. Half of the participants stated that they felt that infertility had negatively impacted their relationships as they began feeling that there was more distance in their relationships. Many of the participants described this distance impacting their relationships with their spouses, as well as friends and coworkers. Greg discussed that engaging in these relationships was difficult because of the weight of trying to look like he was managing the stress well:

> Well, I didn't engage as much as I normally would. So it was like, I was not up to see a movie or up to do whatever social activity there was. I was just wanting to go home and you know, kind of, lift the burden of trying to look ok. So, um you

know, and with friends, friendship and family, other than my mother, that's what it was.

While Greg expressed distancing himself from others, he also expressed feeling that others could not understand him, or a sense of alienation, "So it is something that can make you feel alone, and kind of like an eye in the middle of your forehead that everybody else doesn't have." With these feelings of alienation, some of the participants expressed a desire to have privacy or to not express their emotions or diagnosis openly. Greg stated:

> No one ever said, "Hey what's wrong?"…At work you know, sometimes I would go to the bathroom and just like sit on the floor and cry in the beginning. But outwardly, no one ever asked me if there was anything going on. I don't think anyone suspected anything was wrong.

Each of the participants diagnosed with male-factor infertility discussed a desire to maintain some level of privacy, whether that was to preserve emotional safety or to help maintain a sense of hope, it appeared that privacy was needed for men with male-factor infertility to psychologically manage the diagnosis and treatment.

Out of the eight participants, three of the participants discussed feeling that infertility limited communication within their relationships which therefore contributed to the feelings of distance. One participant diagnosed with female-factor infertility discussed how the diagnosis impacted his wife engaging in friendships and with him.

Greg discussed feeling unable to fully communicate the depth of his emotional experience to those he wanted to talk to, such as his wife:

> Then between my wife and I, it was just, me being depressed. I never, my point of frustration was that I could never articulate to her why it was so hard for me. I didn't have any luck articulating this to her or my mother. And matter of fact, maybe it's a thing that is fundamentally different. This place that I am hurt in, women don't have. Maybe there is a psychology in that it is a little different and not there. And it wasn't until after the baby came, and my wife had trouble breastfeeding that she, she told me "I just feel really bad that I can't do this. I can't do this for the baby and I am supposed to be able to." And I was like, that's it. That is probably as close as it was to being understood. I hated that she had to feel bad and experience that.

Besides feeling that there was a difficulty communicating which impeded connection, four participants discussed that they also compared themselves to others. These comparisons were often to peers who were having children, which led the participants to feel alienated. Dave discussed how this impacted him and his wife:

> There has been some time where for, more for my wife than for me, where she really didn't want to be around some friends because they were pregnant or they were expecting. Especially when she had one friend in particular where she did not want to have kids ever, and then all of the sudden decided to have kids and her infertility was very easy and that was one of the ones that both of us were

> frustrated with because of the fact that they had something wrong…and had a child, and we are still not pregnant.

Additionally, three other participants addressed a form of comparison in that they were thinking about how their infertility impacted others and did not meet the expectations of others. Of these, one participant expressed feeling that he was letting down his parents which impacted him connecting to his parents. Hank addressed how he felt that he was not managing his part of the marriage that he and his wife had established:

> It was that limitation and when you are in that, when I am in an egalitarian relationship and I'm always willing to you know offer up as much as I can in the relationship, and then it's me who is the limiting factor to a goal that we have. It is definitely something that can be difficult.

Another factor two participants addressed that impeded connection was feeling pressure from others. One participant with male-factor infertility described feeling that his wife pressured him because of her desire to have a child. Brad, diagnosed with female-factor infertility described, "My mom really started to drill us when she felt that we were not paying attention." He addressed that his mother felt a need to contribute to managing the infertility through offering advice to help with treatment. The majority, five participants, endorsed receiving advice from others which was often supportive or well-intentioned, but at times hurtful or unhelpful. Carl described it as:

> They tried to offer advice and solace and "well, just keep trying" or "it'll happen," or "well this month, I think it will happen." Yea. But in the beginning there was some of those well intentioned messages, well intentioned, but hurtful… "Oh you just need to relax. If you relax, then it will happen." Just the notion that it is just that simple and that there is one thing if you just fix that one thing then it would happen.

One participant also described experiencing ridicule about his diagnosis of infertility. Adam diagnosed with unknown source of infertility described being teased about the diagnosis:

> But they are like, "Oh, I bet you don't know how to do it."…"You need any help learning how to do it?" or you know things like that. I find it that people who talk to me and imply that I, you know, don't know what I am doing or I'm just…pretty much make fun of me.

Closer intimate relationships. While some participants described feeling separation and distance within their relationships, either by choice or not, most of the participants described feeling closer in their relationships. Many of the participants described distance in some of their relationships while having increased closeness in other relationships. Half of the participants specifically addressed feeling that they experienced increased closeness in some of their relationships once they were diagnosed with infertility. Carl's partner was diagnosed with PCOS as the source of her infertility. He described how this impacted his relationships:

> I guess it has brought us closer to a very small number of people. Most of whom also have PCOS and have gone through some of the same things that we have gone through, or where they have been told they can't ever have children.

Additionally, two participants also addressed feeling that infertility increased the intimacy of their marriage as it increased their communication. Brad stated "that was what really brought us closer, you know closer to each other. How we feel about that type of thing because I don't think a lot of people talk about it to that level." The increased communication about treatment options and the impact of infertility created an increase in connection and feelings of closeness within the relationship. Out of the eight participants, seven endorsed feeling that infertility led to a need for open communication within some of their relationships. Hank discussed perceiving himself as not an openly emotional person, "It's just not something I do and that was, this was probably the one time in our relationship where my wife has seen me, one of the few times in our relationship that my wife has seen me actually tear up." It appeared that for many participants the depth of the stress that infertility had on them led to a need to connect with someone in their lives and seek some support.

Adam described feeling that infertility increased his sense of closeness with his partner because of the need for collaborative efforts to manage the stress, "I think it has brought us a little closer together because we have to work together now and really plan out the next couple of years."

Additionally, three of the participants also discussed using this time and their experiences to educate others. Some of these participants educated others on what infertility is like, while others educated individuals on how to better engage with them or their spouses. Carl described one of these conversations with his mother-in-law:

> I have had a sit-down conversation with my mother-in-law to explain to her, this is how you handle it. Don't try to fix it. This is an appropriate thing to suffer and grieve over and just let her. Let her suffer and let her grieve. That is perfectly appropriate and just offer to be there. Don't try and fix it.

Another impact on relationships which was a reflection of feeling close to another person, was that some of the participants addressed feeling a need to protect others from the stress of infertility. This was the experience for three of the participants who discussed wanting to protect others, particularly their spouses. This manifested in some of the individuals talking to others about how to engage with their spouse, much like Carl in educating his mother-in-law. Other times, the participant expressed a need to protect their spouse from the reality of their feelings and experiences. Greg discussed not wanting to speak candidly with doctors about the infertility in front of his wife:

> Because from that point it is whatever my wife wants. We have this problem and I want to support her, and I can't say exactly how I really feel right now with her sitting here, because it would be callous.

While many of these men may not have felt that they could connect with their partners, three men discussed seeking out opportunities to experience connection with

others and seeking out understanding for their experiences with infertility. Greg stating "no man is immune and I would have liked to have spoken to someone who I knew had an experiential knowledge of what I was going through." Hank is a leader of an online support group which offers and opportunity for men and women to process their experiences of male infertility, and he expressed that, "It's really important for me to provide a place for men experiencing these issues, and women affected by these issues to speak freely." Three participants addressed that they seek out this understanding and connection by reaching out to others who have been diagnosed with similar concerns or who have also gone through infertility. Two participants also discussed feeling that they received offers of help from others who wanted to make a difference for the couple. One participant stated that his mother-in-law had a similar diagnosis as his wife and would often offer advice. Hank described his family members trying to donate money to help assist with the financial costs of *in vitro fertilization*.

Support from family and friends. All of the participants in the study expressed experiencing support in some form during their process of infertility from family, friends, or spouses. Hank stated:

> I think some of the best, most meaningful times throughout the process has just been when I have been able to have friends that I can mention what is going on and receive guidance, support, or just listening to what's going on. I feel like I have already said this, but I think that external support in whatever form or fashion is best. It is always best come to out with it and to talk it out maybe just

because I'm an extrovert and I like thinking out loud, but I think that is really beneficial and a really healing process throughout it.

Carl described what this support looked like when he spoke about his parents. "Well my parents have been wonderfully supportive. They seem to know exactly what to say. They just, they don't judge. They don't offer suggestions or advice. They mostly just offer empathy." This support often seemed to be vital during the process of infertility, like for Greg, "leading up to the IVF thing, my world fell apart, then IVF happened, and I pulled it all together with the support of my wife." It is clear that throughout the process of infertility, from the diagnosis to treatment, it was important for all of the men to have some form of support whether it was from their spouse, family, co-workers, or friends.

Impact on Self

Many participants discussed feeling that infertility impacted their identity and how they saw themselves. For some, infertility had a positive impact because it forced them to increase their self-care and reflect on their personal needs. Some participants also noted that infertility impacted their sense of faith, which impacted how they interpreted their infertility.

Identity. Adam specifically discussed how infertility impacted his identity in that he addressed a desire to not be defined by his diagnosis. He expressed choosing privacy in many relationships because "we are not going to let infertility identify us as a couple." He addressed that "I don't wear that out in front of me. We don't necessarily come out and say we are having problems, they don't need to know." By reacting in this way, he

appeared to be working to manage his identity as others may see him and his wife. Three participants addressed that they felt that infertility impacted their sense of self within their lineage and ability to pass on their genetics. Brad discussed how this changed once he and his partner were able to conceive, "Now that we have our own, there is no longer that burn that we would not be able to carry on our lineage."

This identity concern impacted two participants who addressed feeling that the diagnosis of infertility led to an identity crisis for them. Adam stated, "Well, I think infertility is an identity crisis because even as a kid, you assume you're going to get married, have a kid, and raise a family." Hank was able to describe how he felt that the diagnosis of male-factor infertility impacted his sense of self specifically:

> There is a part of me that is missing. There is still this very basic, very fundamental, the whole reason that we are here is to contribute to the next generation. So this piece here is missing. The baby doesn't fix that.

Both of these participants addressed feeling that their prior notions of self were challenged by the possibility of not being able to have children and pass on their genetics. Both of these men also spoke to wanting to redefine how infertility is perceived by others, but the definitions appeared to be very different based on the participant's experience and diagnosis. Adam, diagnosed with unknown infertility, stated:

> I think the whole term "infertility" has changed quite a bit, because unless there is something physically wrong, there is always a chance. So infertility isn't so much a matter of can you or can you not have a kid, how hard are you willing to work

> for it. Because, I don't know why we don't have children, but there are methods that are available to us and until we have exhausted all those methods, we really don't know that we are infertile.

This definition appeared to be a reflection of the participant's lack of solutions as to the cause of infertility and the desire for him and his partner to not be defined by infertility. Whereas Greg, diagnosed with male-factor infertility, described infertility as:

> From my perspective, I can't speak for anyone else, infertility seems to be solved for women when there is a baby, but for a man, for me, not so much, because for me there is a part of me that is missing. It was, and the thing about infertility is, you are as infertile the day you finish with it, whether successful or not, as the day you started the journey. It doesn't fix anything.

Greg believed that conceiving a child through medical assistance would not change the fact that he was unable to conceive a child through natural intercourse. Knowing that he was the source of infertility may have a more salient impact on the participant's identity because regardless of how medical treatment may change the outcome, the fact remains that he cannot biologically produce a child. The label of "infertile" is therefore permanent.

The difference in these two approaches seems to be in the permanence of the diagnosis of infertility. For Greg, it appeared that infertility fundamentally shook the foundations of his identity as an individual and as a man. While Adam, saw infertility as a milestone in the life of him and his wife. The difference in these approaches to

infertility may be found in the gender socialization of the individual and how masculinity is defined. O'Neil (2013) addressed that when a rigid view of masculinity is held, events which challenge this identity are encountered, they create significant intrapersonal and emotional impact for the individual. Similarly, in the current study, participants' experience of infertility, appeared to influence their fundamental understanding of themselves as men.

While both of these men discussed how infertility impacted their view of themselves, five of the participants discussed how their view of themselves impacted how they interacted with infertility and treatment. Brad discussed how his perception of himself as a man impacted how he coped with emotions, "part of being a guy, just locking everything down. Just swallow the pain." Dave addressed how his profession impacted how he approached treatment:

> I do financial planning for a living, so to me, I am like you need to give me statistics, numbers, I don't, you give me "Rah rah, we are doing the best we can," but I am like, "I still need numbers."

Because of his profession as a financial planner, Dave saw himself as a man who is numbers and statistics oriented. With this orientation, he felt a need for more concrete numbers and statistics so that he could more readily understand the statistical probabilities of having a child through medical interventions so that he could better decide whether to make the financial investment in treatment. Along with feeling that

there was a significant impact on himself when infertility was diagnosed, Brad also addressed feeling that infertility led to a significant sacrifice from him:

> But it just, we basically sell off our whole lives just to try and bring a little one into the world. I saw a very visual photo with a picture of a father giving his son a puzzle piece. They were both made of puzzle pieces. The son was only missing one, but the father was missing a lot more.

Brad referenced figure 2 in his interview to express what he felt his role was as a potential father, which was to sacrifice aspects of himself and his joy to ensure the possibility of having a child in the future. This was a particularly salient moment in the interview with Brad as he became tearful and began reminiscing on the sacrifices of his parents for his happiness as a child. Brad expressed feeling that sacrifice was now an important part of his life since he desired to have children.

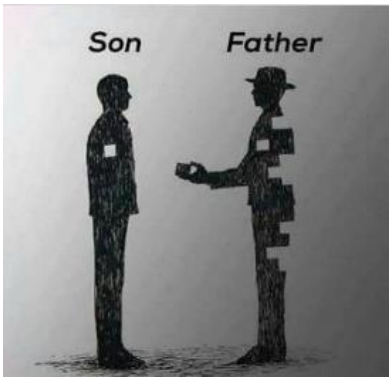

Figure 2. Father giving son sacrifice. Image addressed in interview.

Self-care. Five of the participants addressed that infertility positively impacted their ability to engage with themselves. Three of the participants discussed that they increased self-care, including trying to eat healthier and exercise, but also seeking out

relaxation, like going on vacation. Three of the participants discussed seeking information and reading research to better understand their diagnosis and options when engaging in treatment. For Greg, this led to him advocating for himself with medical professionals about the impact of receiving a diagnosis. Hank also addressed choosing to not continue with treatment because of his increased knowledge about the impacts of treatment, "It wasn't until all of the research into the effects and everything that we went back to our initial decision that this was the line we weren't going to go forward from that." Hank addressed researching the impact of the medications necessary for *in vitro fertilization.* When he found how these medications would impact his wife, he stated that he and his wife decided not to complete the treatment for fear of the consequences. Three participants discussed feeling that infertility led to personal reflection. Adam addressed realizing that he used to hold many misconceptions about infertility.

> I learned a lot and it opened my eyes because I was that person. I remember in my twenties working with someone who had been married and I was like, "Hey, you know, just have a kid. Have more sex." Now I'm kind of in the same boat and I'm thinking, wow that was so probably annoying.

This personal reflection at times led to seeking help or reflecting on whether they should seek help. Greg addressed realizing that he was depressed which led him to seek treatment from his doctor. "I went to a doctor because I had become really depressed about it. So, I went to my PCP to get an antidepressant."

Faith. The majority of the participants, five of the participants, discussed that they felt that infertility impacted their faith and vice versa. For some, their faith seemed to be a strength and protective factor while managing the stress of infertility. Dave stated:

> I guess from kind of a Christian point-of-view of just one of the things that God can call people to do and is it our, you know, and that could be our calling for us to not have, not be parents and if that's it you know, but at the same time, we are not going to give up. We have to exhaust all options first.

For this participant and some others, faith seemed to be a protective factor with which to process the possibility of not having children. However for Brad, there were thoughts about whether infertility was a punishment for previous behaviors.

> The other part was spirituality, because we both had things we maybe thought God was punishing us for…She always felt that was, you know, God saying, 'Why would you ever, why would you leave him?'…Mine was that when I was younger, I was always so afraid of having kids at a young age, or you know with some girl I did not plan to marry. So, I would pray to God, "Please don't let her be pregnant this time."…And you know, all these things I thought, God she is not pregnant now because of that time. So for me, I always held on to that, that maybe I caused it, or maybe this was the reason for it.

Eddy also addressed how his religious community had practices and norms which produced a strong contrast to his infertility.

> My wife and I are Orthodox Jews. The only reason I bring it up is because of what I alluded to earlier. Our community as a whole doesn't use contraceptives, stuff like that. It's a little complicated for all kinds of purposes. And a lot of people marry particularly young, at least in today's standards…I have a lot of friends in their early thirties. I am thirty right now, and they have four kids. Some people have more kids.

The individuals who discussed the impact of faith on their understandings of infertility were all self-identified White men. Both individuals within this study who identified as ethnic minorities also identified as religious; however, they did not speak exclusively to the factor of their faith. This appears to be a difference in the representation of religion within the cultures of the individuals. Religion has a long-standing impact within the culture of African American and Hispanic individuals as a response to colonialization and societal oppression (Johnson, 2015; Nabhan-Warren, 2016). Because of the deeply intertwined nature of religion and culture for many ethnic minorities, the participants who identified as ethnic minorities did not explicitly speak to their experience of religion, but rather incorporated religious values and ideals throughout their responses. An example of this incorporation is the positive-orientation of both participants, as Greg stated, "During the whole IVF process and we were very very very blessed because it only took one time, but during that process, that is just a hard period for everybody." He addressed the religious value of seeing himself as "blessed," but he did not explicitly address religion.

Recommendations

Participants were asked if they had recommendations for medical professionals and mental health professionals given their experiences of infertility and medical treatments. The results of their recommendations are compiled below. The most important themes I noticed in their recommendations were requests for more doctors who specialize in infertility treatment, and more acknowledgement of the patient's experience in treatment.

More doctors. Half of the participants addressed feeling that they did not have appropriate access to doctors when they were needed. Carl addressed this challenge:

> We don't just drive ten minutes to the local gynecologist. It's a four-hour round trip in the middle of the week. She has to get time off of work so we are also limited to some of the procedures that we can do if we can't do them at home.

Another participant expressed similar concerns, while others addressed feeling that the services available were limited or poor. Brad stated that the clinic he found "was kind of like a Wal-Mart of infertility clinics, where it was like they were more focused on, they had way too many patients for that one doctor. He just looked overwhelmed." Five participants addressed feeling that the treatment that was available to them was impersonal and did not take into account the needs of the patient. The individuals who expressed these concerns about their treatment were also more likely to have expressed not trusting the judgment of the medical professionals. On the other hand, three of the participants discussed trusting medical professionals' education and ability to treat them,

and each of these participants also discussed having higher access to treatment and the ability to change doctors as needed in treatment.

In addition, two of the participants discussed the importance of not only more doctors who specialize in treating infertility, but also increased efforts for interdisciplinary teams to treat infertility. For instance, Greg addressed, "at that point, where the diagnosis is made, and it's male infertility, then maybe there should be a little something like, alright go see the urologist." Hank also addressed the need for incorporation of mental health into the physical health practice of caring for infertility.

> If they could be more interdisciplinary then it would be positive because then they could you know, "in this process you are going to feel these sorts of emotions." I feel they know it very technically, but they don't know it with the people that are going through infertility and the emotions that are associated with that. So, I feel like if they knew a little but more, then they could handle it in a more sort of human way as opposed to like a mechanic.

Acknowledge patient experience. Aligned with patient care, three of the participants discussed the need for medical professionals to acknowledge the patient experience and how difficult infertility can be on the individual. When Fred began experiencing pain after medical treatments, he expressed that he just "wants the pain to be acknowledged as a matter of fact and treatment suggestions to be offered as opposed to sought." Dave also addressed feeling that medical professionals were at times insensitive to the realities of his experience.

> So, I feel like the medical professionals in a way, like I guess underplay that I guess. Mainly they are trying to be upbeat because that is a good thing for the patient. But from our standpoint it has been more frustrating…That's frustrating more than anything else and I think that the medical profession tends to think that it's a good thing because they normally deal with people with problems and may not be totally sensitive to the fact that, hey it's actually something, it can still be just as hard because there is nothing. I still feel like we are blindfolded and throwing darts in the dark.

While some participants felt professionals were insensitive, two of the participants discussed having situations when pursuing medical treatment which felt traumatic to them. Carl described one incident with his partner:

> Well there was one procedure where my wife… we are not clear if it was an adverse reaction to a drug, or if it was normal. They just didn't prepare us…when we got to the hospital, they didn't do anything.

Fred also described feeling that his experience was not validated by medical professionals in regards to his pain:

> Following surgery, I had chronic pain that got worse and worse following each surgery. I am so traumatized from the procedures that I don't want to bring it up and threaten another procedure to fix it or cause any further inspection or disturbance.

Along with wanting to have their experience and pain acknowledged by doctors, three of the participants addressed a desire for more research to be done about infertility and for more information to be provided to patients when they seek treatment. Hank stated:

> I think that it would be good to have a more well-rounded picture of treatment. I feel like they offered like a bare-bones that is…they offered very technical aspects of "this is what is going to happen in treatment, in IVF and whatever. This is what is going to happen." But like for my wife, it took a lot of her finding out the effect to her body from research she did. They didn't offer any of that.

CHAPTER V

DISCUSSION

Overview

There is a gap in the literature regarding the experiences of heterosexual men with infertility (Culley et al., 2013). Much of this gap is due to the focus on the infertility experiences of women and identifying infertility as a woman's issue (Throsby & Gill, 2004). Prior research which included men, often would incorporate men into the study as part of a marital partnership (Almeling & Waggoner, 2013), or explore men's experiences utilizing theories of infertility developed from interviewing women (Culley et al., 2013; Pacey, 2009).

This current study documented the experiences of eight men who had been diagnosed with infertility. These men were from different ethnic and religious backgrounds and had varied infertility experiences, including variations in infertility source, duration, and treatment. This chapter introduces a new grounded theory understanding of diverse men's experiences with infertility. This theory suggests that the experiences of men with infertility are both convergent and divergent from the existing literature. The findings of this study are discussed within the existing literature. The remaining chapter will explore the limitations of the current study, reflections from the researcher about the study, clinical implications of this theory, and recommendations for future research.

Discussion of Findings

The grounded theory that emerged from the interviews with participants revealed varied experiences for men based on the type of infertility with which the couple was diagnosed. Men in relationships with a diagnosis of male-factor infertility presented with deeper internalized experiences, including internalized emotions, alienation, and feeling hopeless towards prospects of treatment. The men in relationships diagnosed with female-factor or unknown infertility both presented with a reaction to diagnosis which included seeking deeper relationships with their partners, including empathic responses to their partner, seeking closer relationships, and attempting to care for their partner through active coping and externalized emotions.

In contrast to Kumbak et al. (2010) findings, this study found a difference in the experiences of men based on whether the diagnosis was due to their irregularity or their partner's irregularity. The differences found in the current study may have come from the nuances of emotions and experiences described by the participants during the qualitative investigation. This emotional subtlety may be harder to ascertain when utilizing quantitative measures. The theory established in the current study appears to be more aligned with the findings of Nachtigall et al. (1992), who found that individuals experiencing male-factor infertility experienced higher levels of distress compared with counterparts experiencing female-factor infertility only. Both of these groups expressed feelings of role failure, but for men diagnosed with male-factor infertility, the role failure was more internalized and identity-based because of their inability to procreate. In

contrast, men in relationships diagnosed with female-factor infertility, experienced role failure due to their inability to fulfill their position as a partner in caring for their spouse and being able to provide their wives with a child to ease the pain of infertility.

Sometimes, men with infertility may experience an identity crisis after their diagnosis. Whether this identity crisis is due to a loss of masculinity (Throsby & Gill, 2004), or an inability to follow the traditional path to parenthood (Webb & Daniluk, 1999) is debated in the existing literature. In this current study, the findings show that although these men might experience an identity crisis, the reasons for the crisis differ for individuals based on the factors contributing to the infertility. Men who experience male-factor infertility may be more at risk of experiencing an identity crisis related to their perception of loss of masculinity and the ability to procreate. When faced with this threat to their identity as men, individuals may experience infertility as a new identity and begin to embody infertility as the new norm. Infertility would then lead to significant internalized emotions and possible depression as their understanding of themselves as men is being challenged (O'Neil, 2013).

On the other hand, men in couples who are diagnosed with female-factor infertility, or unknown infertility, may be more likely to have an identity crisis because of their inability to follow the traditional norms of getting married and then having a child biologically. This crisis is more related to the inability to provide their spouse with a child as is dictated within the normative dialogue about heterosexual partnerships. These experiences of identity crises may be associated with feelings of sadness and frustration.

This challenge to their perceived course of life may be resolved when the couple is able to have a child, making infertility a temporal challenge to the couple rather than a lasting challenge to the individual.

Much of the existing literature presents an emotional experience of infertility which appears to be aligned with the experience of the men in this study diagnosed with male-factor infertility (Dyer, et al., 2004; Fairweather-Schmidt, et al., 2014). Some international studies found that men diagnosed with infertility experienced symptoms of depression (Dyer, et al., 2004; Fairweather-Schmidt et al., 2014). In this current study, men who were diagnosed with male-factor infertility presented with internalized emotions, such as feelings of sadness, pain, guilt and shame which are often associated with a more depressive presentation.

When men presented with this internalized reaction to infertility, they began distancing within their relationships. Dooley et al. (2011) found that men who had male-factor infertility often did not share their emotional experiences with their partners due to feelings of shame and inadequacy. When men were diagnosed with male-factor infertility in the current study, this same pattern of distancing in all relationships was evident and appeared to serve as a mechanism of self-protection and seeking of privacy in what many individuals described as an invasive and traumatic experience. Webb and Daniluk (1999) found that this coping style can have a negative impact on the marital partnership because the wife is unable to console her partner through a stressful life circumstance. Williams, Bischoff, and Ludes (1992) described how men's coping styles of distancing often will

lead wives to feel that their partner may be disinterested in infertility causing feelings of anger or frustration. So while wives may interpret these behaviors as disinterest in infertility treatment, the current study showed that this coping skill results from feeling hopeless and sad about the diagnosis of infertility leading to a desire to disengage.

This coping style of distancing also appeared to arise when men felt that they were not the focus of treatment. Almeling and Waggoner (2013) found that most men were treated as secondary participants in infertility treatment. Many of the men with male-factor infertility expressed feeling that they were not the focus of medical professionals treating the infertility. Men who feel they are treated as secondary participants in treatment may internalize messages that they are unimportant and consequently be unable to verbalize their experience or concerns to their partner. Many men even find the process of infertility treatment to be humiliating and shameful (Webb & Daniluk, 1999). Some participants addressed feeling that their only contribution to the infertility treatment was the sperm needed to complete the fertilization, which felt dehumanizing. Many men also expressed feeling embarrassed going to an infertility clinic to complete procedures and sitting in a waiting room with women. Many participants expressed a desire for more privacy and separate waiting rooms for men to help minimize these feelings.

Dyer et al. (2004) framed the coping skill of emotional suppression as a means for the men to focus on the emotional distress of their wives. In this study, the coping skill of focusing on their partners' distress was found more often in men diagnosed with female-factor infertility rather than male-factor infertility. In this current study, some of the men

diagnosed with male-factor infertility addressed the emotional experience of their wives, but this did not negate their personal emotional experience.

Williams, et al. (1992) found that many wives interpret men's emotional coping as disinterest in infertility treatment, this interpretation often leads these women to feel abandoned by their partners. While the wives may feel abandoned, each of the men diagnosed with male-factor infertility expressed feeling that their wife was a vital support through infertility. Though they were hesitant to express to their wives the depth of emotional pain because of shame, and at times difficulty communicating their experience, this did not negate the men finding their partner to be supportive to their overall wellbeing and coping.

This study found that men in couples diagnosed with female-factor infertility coped with infertility by focusing on their wives and externalizing emotions such as anger and annoyance. Cousineau and Doman (2007) found that men reported not sharing their emotions with their partners to maintain a supportive and protective position towards their wives during infertility. This finding appears congruent with the findings of this current study in relation to men in relationships diagnosed with female-factor infertility. It appeared that for these men, the goal was to support their partner which at times meant focusing on the wellbeing of their wives or engaging in active coping strategies, such as managing finances. While this reaction appears to be in an effort to be supportive of the partner diagnosed with infertility, this may lead to difficulty in communication within the partnership if the wife feels that her partner is focused on changing the circumstances or

fixing the infertility more than emotionally supporting and understanding her. Williams, et al. (1992) addressed that when men focus more on trying to fix the infertility and do not express the emotional impact or pain from the infertility, the wives may feel that their partner does not care about the infertility leaving the wife feeling alone and abandoned during the process of treatment. However, the findings of the current study show that men are utilizing emotional repression as a means of managing their personal pain so as to support their wives and feel closer.

The coping skills for managing infertility distress that were found in this current study were similar to the findings of Peterson et al. (2006) who outlined men's coping to include distancing from the stressor, self-controlling, and planful problem-solving. However, the preferred coping found by Peterson et al. (2006) that coincided with the current study was for men to seek social support. Whether men sought this support from their partner, coworkers, or others with a similar diagnosis, men with male-factor, female-factor and unknown infertility all expressed the importance of having social support while going through the process of infertility.

The current study not only looked at men early in their diagnosis, but also men later in diagnosis to understand the process of infertility throughout treatment. Many of the findings appear to be congruent with the findings outlined by Webb and Daniluk (1999) who found similar changes over the course of accepting a diagnosis of infertility. Many of the men in the current study experienced varied reactions to the diagnosis of infertility which differed based on diagnosis. However, as time proceeded after their

diagnosis, there was a progression of sorting through possibilities for treatment and making decisions. Also, many of the men discussed a need to reconcile the diagnosis to their identity over time and coming to change their perspective of their future to account for the diagnosis of infertility. For some of the men diagnosed with male-factor infertility this meant deciding to cease infertility treatment and accept their infertility by deciding to not have children. This change often appeared to be a response to the need to control an overwhelming and out-of-control experience. Some of the men in couples with female-factor infertility discussed changing their goals for their future to include traveling and possibly adopting, but they appeared to transition to a more adaptable and fluid approach to their future once being diagnosed with infertility.

Limitations

While this study produced many findings which contribute to the overall understanding of men's experiences with infertility, there are some limitations to this current study. The primary limitation of this study was the sample size. The group of men who participated in this study was very small, and smaller than originally proposed. Also, the sample was more representative of White men of middle and upper socioeconomic status. The reason for the lack of size and diversity came from the sampling options and the responses of participants. During the research design phase of the current study, it was clear that it would be difficult to recruit men into research about infertility, but I underestimated the difficulty of recruiting these individuals outside of infertility treatment facilities and support groups. The men who volunteered to be a part of this

study appeared to be eager to assist in research and to voice their experiences in hopes of making change, but also these men all had experiences of diagnosis and treatment within infertility. Only one individual responded to the initial data survey who was from a lower socioeconomic status, a population that I specifically worked to recruit, but this individual was not able to be reached for completion of the interview stage of the study.

While I recruited heavily among individuals with low socioeconomic status, their response rate to the study was minimal. The strong response from men of middle and higher socioeconomic status may have been due to the higher rate of access to medical treatment within these socioeconomic groups, but also may have been due to these groups feeling more historical response to their experiences which encouraged them to express their concerns openly (Sun & Wang, 2011). Because of the non-representation of voices from individuals of low socioeconomic status, the theory derived from this study may not be applicable to all men experiencing infertility, and more research may be needed to test the applicability and generalizability of the findings.

The last limitation of this study would be the choice of completing all interviews through telephone rather than in-person. This was a strategic decision in the design of the study to increase the geographical accessibility of the study to participants, and to increase anonymity hopefully allowing for more emotional vulnerability on behalf of the participants. However, because of the phone-interview model, there was a lack of non-verbal data when interviewing participants. Non-verbal information often can be fruitful in analyzing qualitative data, and when completing coding there were times that I was

aware of the missing the facial and bodily reactions to responses that participants provided. I believe this made the information gathered slightly less rich than it may have possibly been with an in-person interview. However, it is noteworthy that participants repeatedly expressed desires for anonymity and privacy yet they were able to be emotionally vulnerable with me during the interview process. I attribute much of this emotional openness to the fact that data collection was done via phone-interviews where participants were physically alone during the interviews.

Researcher Reflections

In qualitative research, it is important for the researcher to reflect upon the experiences of the research including keeping notes about perspectives throughout the process of research (Patton, 2015). Many of these notes allowed for analysis of possible biases or desires for the results of the study which could have impacted the analysis. The following section is a review of my reflections as the researcher throughout the process of conducting this research.

During the process of recruiting participants and beginning interviews, I found that I was astonished at the difficulty in recruiting individuals and at times I felt that I had exhausted my resources. However, once I began conducting interviews, I found that each interview reenergized my work and my motivation to complete the study. The emotional vulnerability of the participants was often emotionally moving for me and at times brought me to tears realizing the challenges that the men had faced. I felt honored to be

entrusted with their stories and felt a sense of responsibility to appropriately represent their experiences.

Once I completed the interviews and began the process of data analysis, I was surprised with the findings related to the care participants expressed for the emotional experience of their partners. Due to my knowledge of research about men experiencing infertility and the pathologizing presentation of distancing as a coping mechanism, I expected men to be more emotionally distant and at times callous towards the emotions of their partners. However, these men expressed deep distress over the emotional distress of their partners, and a desire to help relieve that distress. The men I interviewed expressed feeling highly connected to their partners and that their partners were a main source of support. Each of these aspects of the men's experiences were surprising to me because it appeared to be incongruent with the existing literature. Because of this surprise, I felt that this was an important variable to address in my research findings in hopes of clarifying reasons behind men's withdrawal during infertility and also how it might be adaptive for them in the moment.

Clinical Implications

There are multiple aspects of this study which could be applicable to the clinical work of both mental health professionals and medical professionals. The first clinical implication of this current study would be the difference in the impact of male-factor versus female-factor infertility. For mental health professionals working with men experiencing infertility, it would be important to assess the diagnosis of infertility to

assist with predicting the emotional, psychological, and relational impact of the diagnosis. Men with male-factor infertility, may benefit more from individual therapy allowing them the opportunity to process their emotions within a protected environment in which they do not need to regulate their responses for the perceived benefits of their partners. It would be important for clinicians to normalize this pattern of internalizing and relationally distancing, and possible offer psychoeducation to the partners so as to help support men utilizing this coping skill. In working with men, it is important for clinicians to not pathologize behaviors, or to apply stereotypes to men, but rather to normalize their behaviors and allow clients the opportunity to process gender socialization and the impact on their emotional and relational functioning (Mahalik, Good, Tager, Levant, & Mackowiak, 2012). Also, therapists should be aware that these men may be at a high risk of developing depressive symptoms which may inform the treatment approaches of the clinicians and diagnostic assessments.

If a client is in a relationship with female-factor infertility, it may be beneficial for couples-based counseling and allowing the wife the opportunity to express her needs towards her partner so that he may feel he has a tangible way of supporting his spouse through the process of infertility. When working with couples, a psychoeducational component may be important so as to address men's tendency to emotionally withdraw and how this tendency may impact the relationship. Offering this psychoeducation may allow the couple to work on ways of creating a balance between the man's need to emotionally withdraw, externalize, and actively cope with the infertility and reducing the

wife's need to process her feelings by not immediately working to find a solution to the concerns which may be perceived as invalidating by the wife. Learning about and processing this pattern in couple's therapy may be helpful for both partners to understand that this is the pattern they might engage in and learn to empathize with the different coping styles while still meeting each other's' needs. This pattern of processing is reflective of negative cycles within emotion-focused couple therapy and appears to align well with the theoretical underpinnings of this therapeutic modality (Johnson, 2004). Emotion focused couple's therapy has also been shown to decrease emotional distress in couples experiencing infertility (Soltani, Shairi, Roshan, & Rahimi, 2014), as well as increase marital commitment and decrease burnout (Sayadi, Tazik, Madani, & Lavasani, 2017). Due to these factors, emotion focused couple's therapy may be a strong therapeutic approach to counseling couples managing infertility concerns.

For medical professionals, it may be important to take into consideration the diagnosis when interacting with patients as well. For instance, if patients have been diagnosed with male-factor infertility, these patients may be more likely to leave treatment prematurely due to feeling that medical professionals are not responsive to their needs and the emotional impact of the diagnosis. Also, all men experiencing infertility, no matter the diagnosis, find infertility treatment to be vulnerable and therefore would desire aspects to increase privacy, such as separate waiting rooms for men versus women. Previous research has shown that the most important factors to patients when choosing a medical professional for treatment is the approach of the doctor to treatment and the

interpersonal skills of the doctor (Bernard, Sadikman, & Sadikman, 2006). Therefore, it would be beneficial for doctors to validate and normalize patients' reactions to diagnosis.

Spirituality is another important aspect of mental health treatment (Vieten, et al., 2016). Clinicians working with men diagnosed with infertility, should incorporate spirituality into treatment, as it appears to be a positive coping mechanism for these men. Specifically, for White men who are religious, religion may be a variable which would need to be explicitly addressed to assess clients' interpretation of infertility and their experience through a religious lens. Assessment of the client's interpretation of religion would allow for the clinician to understand more of the client's self-assessment and whether religion is a positive coping mechanism in their life, or used for negative evaluation of self, such as believing infertility is a punitive result of past sexual behaviors not aligned with the moral teachings of their faith. For clients who are ethnic minorities, religion may not be presented explicitly, but rather may be represented through statements of optimism and positivity, but religion is highly important to overall wellbeing for these individuals and should be addressed in therapy. It would be vital for clinicians to recognize the orientation of these statements and reinforce these perspectives for clients of ethnic minority backgrounds to further promote positive coping. Vieten and colleagues (2016) outline 16 important competencies for clinicians to incorporate spirituality and religion into clinician treatment to promote best practice.

Overall, when working with clients, it would be important for clinicians to take into context each of the client's demographic variables not only individually but

collectively. The intersection of different identities has a strong impact on how clients will interpret the world and their experiences (American Psychological Association, 2017). It was beyond the scope of this study to fully assess the impact of participants' intersecting identities. However, clinicians should consider how individual variables, such as race, ethnicity, socioeconomic status and religious identity may impact one another, and the resulting impact on how the individual interacts with their diagnosis of infertility. While individual variables for clinical consideration are included in this section, clinicians should work to have open dialogue with clients about the impact these variables may have on one another to shape their experiences and understandings of their experience of infertility as a whole.

Lastly, mental health clinicians or medical professionals may think about offering support group opportunities to clients with infertility. Many of the men in this study expressed a desire to interact with other men with a similar diagnosis. This group model may be beneficial for clients, but many men may be hesitant if the group is attached to group therapy models or if there is a risk of loss of confidentiality. Because of this, it may be beneficial for these groups to take a model of peer-support groups allowing for open expression of experience and support from others with a similar experience. Also, it may be beneficial for these groups to only require clients to disclose their first name until they are more comfortable with group members, which would allow the clients the autonomy to develop relationships as they are ready or maintain the level of anonymity needed to encourage help seeking behaviors. Research has found online support groups to be

positive in assisting with gaining information and emotional support for individuals with infertility (Malik & Coulson, 2008). Also, individuals who are not ready to actively participate have been found to have positive benefits to being a part of an online support group even if they are not actively posting or adding to the discussions (Malik & Coulson, 2008). Utilizing online support groups may be an important first step for some men to gain information and to feel normalized in their emotional reactions to their diagnosis.

Recommendations for Future Research

The purpose of the current study was to establish a theoretical understanding of men's experiences of infertility across multiple diversity variables. Future research would be valuable to assess the overall generalizability of this theory as well as different aspects of the theory. While the current study found differences between participants diagnosed with male-factor and female-factor infertility, further research is needed to assess the nuances of these differences. Specifically, assessing the emotional and coping responses of men diagnosed with male-factor and female-factor infertility utilizing empirically validated measures would be a means to establish these differences and similarities. By using quantitative measures, the experiences of these individuals may be evaluated with a larger sample size and establish greater reliability of this theory.

Lastly, while this study created a theoretical understanding of men's experiences of infertility, the sample was not as diverse as the general population. Because of this, this study would benefit from being reproduced with a larger sample of men including a

sample with increased diversity, with particular attention to ethnic minorities and men of lower socioeconomic status. By researching this theory with a broader population, it could be generalized to more men experiencing infertility. However, research has shown a pattern of difficulty in recruitment and engagement of individuals of lower socioeconomic status in research endeavors. Individuals have stated that their hesitance to engage in research is due to the perceived invasive nature of having an unknown individual ask questions about their lives (Heinrichs, Bertram, Kuschel, & Hahlweg, 2005). Based on historical patterns of abuse of authority among low socioeconomic and racial minorities, these reasons do not appear to be arbitrary, but rather results of systematic patterns. Therefore, in order to incorporate individuals with ethnic minority backgrounds and individuals from lower socioeconomic status, it may take a researcher engaging in the community and gaining connection which makes the researcher a trusted part of the community prior to asking individuals to engage in research. Also, it may be beneficial for the research to conduct the research in a direct face-to-face format in order to present with transparency for continued fostering of trust.

Conclusion

In conclusion, the current study sought to understand the experiences of men diagnosed with infertility. This study highlighted the rich and complex emotional and psychological experience of men across diverse personal and medical variables. Further, the findings provide insights that will guide infertility treatment and offer more informed and sensitive medical and mental health services for men experiencing infertility.

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APPENDIX A

Initial Data Form

Initial Data Form

1. Would you be willing to be interviewed about your infertility experience?
    a. Yes
    b. No
2. Have you had a period of at least 12 months within your life in which you tried unsuccessfully to have a biological child?
    a. Yes
    b. No
3. Age: _____
4. Sex: Male Female Intersex Other (Please specify)
5. Gender: Male Female Transgender Other (Please specify)
6. Sexual Orientation: Heterosexual Gay/Lesbian Bisexual
    Asexual Other:_____
7. Ethnicity:
    a. African American/African
    b. Asian American / Asian
    c. Native Hawaiian / Pacific Islander
    d. Euro American / Caucasian / European
    e. Hispanic / Latino(a)
    f. Native American / Alaskan
    g. Native Middle Eastern

h. Other (please specify): _____

8. Religious Orientation: _____

9. Years of education: _____

10. Yearly Income:

    a. Less than $25,000

    b. $25,000-$50,000

    c. $51,000-$75,000

    d. $76,000-$100,000

    e. More than $100,000

11. Marital Status:

    a. Single/ Never Married

    b. Committed relationship

    c. Married

    d. Separated

    e. Divorced

    f. Widowed

12. Number of biological children, if any: _____

13. How long have you unsuccessfully been trying to have children: _____

14. Cause of infertility:

    a. Medical/biological issue in partner

    b. Medical/biological issue in self

c. Medical/biological issue in both self and partner

d. Unknown

15. Have you and/or your partner undergone treatment for infertility? Yes No Unknown

16. If you and/or your partner have undergone treatment for infertility, for how many years/months? _____ Years and ____ Months

17. What kinds of treatment have you and/or you partner had for infertility? Check all that apply:

    a. No medical treatment

    b. Non-medical assistive treatment (acupuncture, herbal remedies, etc.)

    c. Hormone therapy

    d. Medical infertility treatment (i.e. In Vitro Fertilization (IVF), Intra-cytoplasmic sperm injections (ICSI), etc.)

    e. Other: _____

18. Name: _____

19. Phone number: _____

    b. No

20. May we leave a voice message at this phone number?

    a. Yes

    b. No

APPENDIX B

Interview Questions

Interview Questionnaire

1. What messages do you believe society sends to men who are experiencing infertility?
    a. What such messages, if any, have you personally received?
    b. What impact did these messages have on you?

2. Tell me about your experience with infertility.
    Prompt: What interventions did you pursue in relation to infertility, if any?

3. How, if at all, did infertility impact your day to day functioning as a man?
    a. Were there any noticeable changes in your ability to function throughout your day?
    b. How did infertility impact you emotionally, if at all?

4. How did infertility impact your relationships with others, if at all?
    Prompt: Did infertility impact your ability to connect with any individuals in your life?

5. Some couples experiencing difficulties conceiving may receive comments or feedback from family, friends, or coworkers while others do not. What has your experience been??
    Prompt: How were you able to manage this situation?

6. What plans, if any, do you have to pursue treatment in the future?
    Prompt: What motivated your decision for this plan/these plans?

7. As you think about your experience of infertility as a man, what, if anything, is missing from treatment?
    Prompt: What is needed to create a safer and more inclusive treatment of infertility?

8. From your experience of infertility as a man, what would you like for medical professionals to know about men's infertility, if anything?
    Prompt: From your experience of infertility, were there any deficits or misconceptions held by medical professionals about what infertility is like?

9. From your experience of infertility as a man, what would you like for professionals who offer emotional support, such as counselors or psychologists, to know about men's infertility, if anything?

Prompt: From your experience of infertility, were there any deficits or misconceptions held by professionals offering emotional support about what infertility is like?

10. What changes, if any, do you think lay in store for you and your partner in regards to the issue of infertility?

11. What, if anything, would you like to add that I may have missed in helping me to understand the experience of infertility for you as a man or that you would want other men who experience infertility to know?

12. Many people find that infertility may impact their worldview or faith, whereas others find that their worldview and faith impact how they experience infertility. How have you experienced either of these or not?

APPENDIX C

Recruitment Flyer

Men's Experiences with Infertility

We Need your Voice to be Heard!

This is a dissertation study, conducted by Kimberly Hernandez, M.A. at Texas Woman's University, working to understand the experiences of men over the age of 18 who have been unable to have children. Eligible participants will receive a $25 gift certificate at the completion of the study, if you are selected to complete the interview portion of the study. Interested participants will complete a three-part study:

- Part 1: a brief online survey to determine eligibility for participation
- Part 2: an hour-long interview with the researcher over the phone
- Part 3: a chance to review the researcher's analysis of your interview to make sure it represents your views correctly.

This study is voluntary and you may withdraw from the research at any time. This is a university sponsored study which has been reviewed and approved by the Institutional Review Board (IRB) (Protocol #19456) to ensure that the study is conducted in accordance with ethical guidelines. If you would like to be a part of the study, please complete the initial data survey and informed consent at https://www.psychdata.com/s.asp?SID=176678. Please be aware that there is a potential risk for loss of confidentiality in all email, downloading, electronic meetings, and internet transactions. If you have any questions please contact the researchers Kimberly Hernandez, M.A., at klawson2@twu.edu, or Claudia Porras Pyland, Ph.D., at cporras@twu.edu.

APPENDIX D

Email Recruitment for Participants

To: Research participants
From: Kimberly Hernandez
Texas Woman's University
Denton, Texas
Klawson2@twu.edu

Hello. My name is Kimberly Hernandez. I am a doctoral student in the counseling psychology program at Texas Woman's University. I am conducting a study titled, "Giving a Voice to Diverse Men's' Experiences of Infertility". This study seeks information regarding men's experiences with infertility.

Under the supervision of my research advisor, Claudia Porras Pyland, Ph.D., I am currently recruiting volunteers to participate in this study who identify as heterosexual men, are at least 18 years of age, and have been unable to conceive a biological child after at least 12 months of unprotected intercourse.

If you are interested in participating, the study involves a three phase process. In the first phase, I ask that you access the link below to fill out the informed consent and complete a brief initial survey. This should take approximately 15 minutes to complete. If you are selected, you will be asked to participate in a one-hour phone interview with the researcher. This will include answering questions about your experience of infertility. The last phase of the study would include reviewing the researcher's final summary of the interview to ensure that the results are aligned with your experiences.

When you complete all three phases of the study, you will receive a $25 gift certificate.

This study has been reviewed by the Institutional Review Board of Texas Woman's University and has been approved (Protocol # 19456). If you are interested in the study, please follow the link provided below or cut and paste into a new browser. You will be given detailed information through an Informed Consent form so that you can make a decision about your further participation, and fill out some basic background information. Please be aware that there is a potential risk of loss of confidentiality in all email, downloading, electronic meetings, and internet transactions.

https://www.psychdata.com/s.asp?SID=176678

Thank you for your input.

Kimberly Hernandez
Email: Klawson2@twu.edu
Claudia Porras Pyland, Ph.D.
Email: cporras@twu.edu

APPENDIX E

Informed Consent

TEXAS WOMAN'S UNIVERSITY

Informed Consent Form

Title: Giving a Voice to Diverse Men's Experiences of Infertility

Investigator: Kimberly Hernandez, M.A. Klawson2@twu.edu
214-226-2804

Advisor: Claudia Porras Pyland, Ph.D. cporras@twu.edu
940-898-2312

IRB Approved Study: (Protocol #19456)

Explanation and Purpose of the Research

You are being asked to participate in a research study for Mrs. Kimberly Hernandez's dissertation at Texas Woman's University. The purpose of this research is to understand the experience of infertility among men.

Description of Procedures

As a participant in this study you will be asked to spend approximately fifteen minutes of your time completing one survey, an hour completing one phone interview and ten minutes completing a review of study findings. Completion of the initial survey does not guarantee you will be selected to participate in the full study. To be eligible to participate in this study, you must be at least 18 years of age or older, a heterosexual man, and have not been able to conceive a biological child after at least 12 months of unprotected intercourse.

Potential Risks

You may become fatigued during completion of the survey or interview. You may stop taking the survey or halt the interview at any time, and may withdraw from the research study at any time. Also, you will lose time by choosing to participate in this research. Because of this, you may choose to stop taking the survey or halt the interview at any time, and may withdraw from the research at any time.

There is a risk of emotional discomfort with participation in this study. The surveys will ask questions relating to your experience with infertility, which may be uncomfortable or embarrassing for some. If any emotional discomfort is experienced after completing the survey, you are encouraged to contact a mental health professional. The researcher has provided you with several referrals along with this consent form. You may also withdraw from the research study at any time. Also, the topic of this research is a sensitive topic because of this, you will be informed that the research is about experiences of infertility prior to engaging in the research and you may choose to not participate, or withdraw at

any time.
Although the researcher will take several precautions to maintain your confidentiality, there a potential risk of loss of confidentiality in all email, downloading, electronic meetings and internet transactions. Data from the surveys will be stored without any identifying information and will be password protected by the researcher. Any identifying information will be stored in a separate storage file and will be password protected by the researcher. Also, the master file which links data will stored separate from any other information and will be password protected by the researcher. The demographic survey you will complete at the beginning of the study will not log your IP address. Any information gathered will be stored on the investigator's laptop, which is password protected, and the data file will be password protected as well. Once the study is complete, the data files will be deleted from the computer. Also, all interviews will be conducted in a secure location and all audio recordings will be immediately transferred to the researcher's computer and password protected. The interviews will only be identifiable through participant ID numbers. Once the interviews have been transcribed, the original interview audio will be deleted from the computer. You may receive the results at the completion of the study if you provide your contact information. Please be advised that although your contact information will be stored separately from survey and interview responses, anonymity cannot be guaranteed. Only de-identified data will be presented in the study results.
Even with precautions to maintain confidentiality, your anonymity cannot be guaranteed as a speaker phone will be utilized for the recording of the interviews. Because of this it is recommended that you be aware of your surroundings and utilize a private or secure location for the duration of the interviews.
You should let the researchers know at once if there is a problem and they will help you. However, TWU does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.

Participation and Benefits
At the completion of all phases of the study, participants will receive a $25 gift certificate for your time. If you would like to know the results of this study, we will send them to you.

Questions Regarding the Study
You are welcome to print a copy of this consent form for your records. If you have any questions about the research study, please feel free to contact the researchers; their phone numbers are located at the top of this form. If you have questions about your rights as a participant in this research or the way this study has been conducted, you may contact the Texas Woman's University Office of Research and Sponsored Programs at 940-898-3378 or via e-mail at IRB@twu.edu.

Click AGREE if you consent to participate in this study.
Click DISAGREE if you do not consent to participate in this study.

APPENDIX F

Referral Resources

Referral Resources

American Psychological Association Therapist Locator http://locator.apa.org

Barbara Hokamp, Ph.D. 940.387.1680

Kathie Smallwood, Ph.D. 940.383.3336

Gayla Sahl, Ph.D. 972.757.4929

Psychology Today Therapist Locator

http://therapists.psychologytoday.com/rms/?gclid=CMTvhILllroCFapAMgodRV0A5g

TWU Counseling and Family Therapy Clinic 940.898.2600