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Understanding the Emotional and Treatment Impact of Recurrent Miscarriages for Women Living in Rural Medically Under-Served Areas

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UNDERSTANDING THE EMOTIONAL AND TREATMENT IMPACT OF RECURRENT MISCARRIAGES FOR WOMEN LIVING IN RURAL MEDICALLY UNDER-SERVED AREAS

A Scholarly Project Submitted to the Graduate School in Partial Fulfillment of the Requirements for the Degree of Doctor of Nursing Practice

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Dedication

How very softly you tiptoed into our world,

almost silently,

only a moment you stayed.

But what an imprint your footsteps

have left upon our hearts.

- Dorothy Ferguson

UNDERSTANDING THE EMOTIONAL AND TREATMENT IMPACT OF RECURRENT MISCARRIAGES FOR WOMEN LIVING IN RURAL MEDICALLY UNDER-SERVED AREAS

An Abstract of a Scholarly Project by
Whitney Dickerson

Purpose: The main purpose of this study was to identify woman's feelings, support system, and their grieving process after repeating miscarriages. It was also used to identify any medications or treatments sought for miscarriages and pregnancies.

Design: A qualitative study was completed using a series of interviews performed in the rural area of Southeast Kansas regarding miscarriage history and the women's experiences. Locating women to interview was done through social media, women were chosen who had a series of three or more miscarriages. The study examined access to fertility care in rural communities and the impact of access on women's options regarding their health care. Semi-structured interviews guided by one open-ended question was used to explore the views, experiences, and beliefs of the participants.

Findings: It was a common finding that guilt and self-blame often occurred after a miscarriage but it was noted that many women had good support systems. Most of the women interviewed had difficulty obtaining progesterone after having a positive pregnancy test.

Research Limitations: Achievement of saturation with five interview participants.

Practical implications: It would be beneficial for standing orders to be available at the patient's preferred pharmacy. Microscale changes would be to improve communication between patients and clinics regarding time of positive pregnancy test and the need for progesterone. Another change would be investments into local clinics that would bring a

specialist to local hospital clinics one day a week or twice a month to see patients. Easier access to a specialist could potentially bring a wide variety of patients to the area as well as cut down on the time spent for patients away from their families, jobs, and on the road.

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INTRODUCTION

Description of the Clinical Problem

The incidence of miscarriages is increasing worldwide in both rural and urban settings, and a common problem are miscarriages early in pregnancy. Miscarriages that occur early in pregnancy are a common problem. According to Togas, Barberi, and Eckler, 2018, "Studies show that about 8 to 20 percent of women who know they are pregnant have a miscarriage some time before 20 weeks of pregnancy; 80 percent of these occur in the first 12 weeks" (p. 1). Many women miscarry before they even know that they are pregnant, so the actual rate of miscarriages is higher; "One study that followed women's hormone levels every day to detect very early pregnancy found a total miscarriage rate of 31 percent" (Togas, Barberi, & Eckler, 2018, p. 1). Some women are unfortunate and have multiple miscarriages; three or more is referred to as recurrent pregnancy loss (RPL). Recurrent pregnancy loss affects 1% to 2% of women, which is about 1 in 300 pregnancies (Ford & Schust, 2009).

There are several possibilities that can explain recurrent pregnancy loss, and, along with these possibilities, there are several suggested diagnostic evaluations that can be performed. Genetics is one possibility behind RPL; 2%-4% of RPL is linked with chromosomal abnormalities, and "single gene defects, such as those associated with

cystic fibrosis or sickle cell anemia, are seldom associated with RPL" (Ford & Schust, 2009, p. 77-78**).** Genetic counseling and parental karyotyping are recommended after RPL to rule these factors out. Another possible reason for miscarriages is anatomic and this accounts for 10-15% of all RPL. To determine if anatomy is the cause of RPL hysterosalpingography is recommended, which is where dye is injected into the cervix and a sonogram is used to identify any abnormalities. The endocrine system can also cause RPL; therefore, thyroid labs, insulin, prolactin labs, and ovarian testing should all be performed. Polycystic ovarian syndrome (PCOS) and diabetes are possible endocrine disorders that can account for miscarriages. According to Ford and Schust (2009), "Studies have found evidence of PCOS in at least 40% of women with RPL" (p.78). Infections are a possible cause of RPL; the role of infections related to miscarriages is less clear but affect 0.5%-5% of women. The cause of RPL in nearly half of patients is unknown, so these women remain without a diagnosis.

People who are in rural areas face different issues in locating a proper infertility specialist than people who are living in urban areas. Getting proper health care, or any health care, can pose an issue when living in secluded areas. It is also difficult for patients to make appointments for routine well-woman exams and pre-conception counseling; additionally, the distance to travel for proper healthcare might be substantial and a barrier for many patients. Rural areas have fewer doctors and specialists, or might not have them at all. It might be difficult for women to meet their health care needs in rural areas and they might not see a specialist until they have had multiple miscarriages or serious complications.

Significance

Rural health care and the management of miscarriages is a significant issue for nursing care. Proper understanding of how rural health care works and what women need when they miscarry is important. In addition to the aspect of rural health care, understanding miscarriages and the significance and emotional toll that they cause couples is important for providers to recognize. Often couples are not happy with their emotional care after a miscarriage, so it is important that couples are open with each other and their providers about what they are feeling during this time, but this is rare. After a miscarriage the couples that are not open with their providers are at risk for developing depression and anxiety, but if they are open with how they are feeling and what they are going through this can decrease the risk. Being open after a miscarriage is significant to nursing practice because research has shown that the care provided after a miscarriage "can have a significant effect on the experience of and the emotional and physical recovery from a miscarriage" (Stratton & Lloyd, 2008, p. 5). The care given in the hospital after a miscarriage can affect how the couple copes afterwards, especially if it is a negative experience; "care in the hospital can have a significant effect on the recovery from and experience of having an unexpected miscarriage" (Stratton & Lloyd, 2008, p. 1). Further research would be beneficial to aid in the development and understanding of the interventions that providers can incorporate into their care for a woman after a miscarriage to improve patient care, and this would be appropriate for all health care, not just rural health.

Specific Aims/Purpose

For this study the goal is to gain a greater understanding of the experiences and feelings of women in rural areas following multiple miscarriages. Another goal, after completion of the study, is to publish the findings in a nursing journal.

Theoretical Framework

The theory used for this study was maternal role attainment theory by Ramona T. Mercer, and this theory addresses maternal bonding. Women who have had RPL will have experienced maternal bond at the beginning of their pregnancy. The maternal role attainment theory was established to aid as a framework for mothers that are not traditional, and it aids them in developing their maternal identity. Mercer's theory can be used throughout the mother's pregnancy and can also benefit those mothers that might adopt or foster. The theory helps mothers attach and bond to their infants and likewise for these infants, in which they can attach and bond to their mothers. Major assumptions include, the attachment of mother/infant; behavioral responses such as how a mother responds and how the infant responds; the role partners which include mother, infant, and, often, father. "The major components of the mothering role are: (I) attachment to the infant, (2) gaining competence in mothering behaviors, and (3) expressing gratification in maternal-infant interactions" (Alligood & Tomey, 2006, p. 396).

One major concept from the Maternal Role Attainment Theory used for this study is nursing process, which includes four stages of acquisition. The stage that can be used for this study is the first one, the anticipatory stage; "…includes the mother's acceptance of the fetus as a separate individual and fantasizing about the new baby" (Alligood & Tomey, 2006, p. 396). The second stage that will be useful is the formal stage. "The

formal stage (role-taking) stage begins with the birth of the infant" (Alligood & Tomey, 2006, p. 397). Both stages are important regarding infertility and miscarriages. The anticipatory and formal stage of this framework can be used in preparing women to adapt and learn to care for their infants after their suffering from infertility and RPL is over. The theory's framework can also be beneficial since it can be used throughout pregnancy; most women who have previously experienced a miscarriage can have feelings that they will suffer from another miscarriage and then they will not want to become attached to the pregnancy.

Research Design

With completion of this study, the researcher hopes to gain an understanding of the emotional experiences of rural women who have experienced multiple miscarriages, to determine any related factors, and assess the impact and support of health care providers. The researcher will develop a guide as a reminder of questions to be asked and areas to investigate with the study participants. Questions will include any experiences with, a) distance in seeking infertility treatments after a miscarriage, b) financial concerns, c) access to health care and specialists, d) support systems, e) feelings toward seeking repeated treatments, and f) any feelings of guilty or self-blaming.

Definition of Key Terms

A. **Infertility -** "Infertility is defined as not being able to get pregnant despite having frequent, unprotected sex for at least a year for most couples" (Infertility, 2018). Frequent miscarriages are a common sign of infertility ("Infertility," 2018, para 1).

B. **Miscarriage -** "A miscarriage is the spontaneous loss of a pregnancy from conception to 20 weeks' gestation. Miscarriage is sometimes referred to as spontaneous abortion because the medical term abortion means the ending of a pregnancy, whether intentional or unintentional. Most miscarriages occur in the first trimester of pregnancy, from seven to twelve weeks after conception" ("Definition of miscarriage," 2016, para 1).

C. **Recurrent pregnancy loss (RPL) -** "Recurrent pregnancy loss is defined as having two or more miscarriages. After three repeated miscarriages, a thorough physical exam and testing are recommended" ("Repeated miscarriages," 2016, para 1).

D. **Rural -** Rural areas are less populated and is generally a large area of land with few houses. Most rural people live or work on a farm and wild animals are commonly found in rural areas. (National Geographic Society, 2012, para 1).

E. **Urban -** Urban areas are more populated and houses are close together. Urban is considered the city. (National Geographic Society, 2012, para 1).

I. Logic Model of the Proposed DNP Project

Inputs	**Outputs**		**Outcomes -- Impact**		
	Activities	*Participation*			
• Interviewees • 8-10 women with previous experience of RPL/infertility • Committee members • Writing center • Instructors • Research • Obstetrician	• Interviews • Research • Journal publication	• Interviewees • Committee members • Writing center	Short Term: • Fully plan interview questions • Choose and contact women to interview	Mid-term: • Finish interviews by fall 2019 • Put interviews into writing	Long Term: • Publish in a journal or poster presentation • Improve the ability to locate and afford rural infertility healthcare
Assumptions: Interviewee participation and input.			**External Factors: interviews, timeline**		

Summary of Chapter

Completion of this qualitative study will provide a better understanding of the feelings, attitudes and factors affecting rural women who have experienced multiple miscarriages. The researcher will be open to new topics areas not initially considered as the research evolves as well as gaining new knowledge about why women act in certain ways and their feelings.

Previous quantitative research studies have shown in general that many rural residents lack insurance or have inadequate insurances and they often do not seek treatment due to fear of the financial cost. In addition, many rural residents have indicated cost of transportation and distance to specialists are factors in receiving appropriate care. Many rural women may need to consider these same issues and the overall financial costs to obtain specialized care when seeking fertility treatments. This study will seek to understand if and how these factors may affect rural women who have experiences RPL.

Chapter II

REVIEW OF THE LITERATURE

The purpose of this literature review is to a) better understand infertility and miscarriages; b) obtain more information regarding specialty care in rural communities; c) investigate the significance miscarriages and infertility have on psychological aspects of women; d) explore if there is a relationship between treatment for miscarriages and rural healthcare; and e) identify what health care management is offered in rural health care settings for those experiencing miscarriages.

Review Parameters

A systematic search of the literature was performed using the electronic databases of CINAHL Plus with Full Text, Pubmed, Proquest Nursing and Allied Health. Additional articles from Elsevier and other online resources relevant to the purpose of this literature review were identified and included as part of the literature review. Key terms and phrases utilized during the search of the literature included the following:

- Infertility
- Miscarriages
- Recurrent pregnancy loss
- Miscarriages and infertility psychological effects
- Miscarriages treatment and management

- Model of maternal role attainment
- Polycystic ovarian syndrome
- Rural health care and infertility
- Specialty care for miscarriages in rural areas

Miscarriages and Infertility

Miscarriages contribute to a large percentage of pregnancy complications. Miscarriages related to infertility complications have touched a large percentage of couples. Infertility can include the inability to become pregnant due to different factors such as hormones or PCOS. Infertility may also include miscarriages and recurring pregnancy loss. Pregnancy loss and the inability to become pregnant can take a toll on women of reproductive age, not only physically but emotionally as well. Infertility can affect both men and women. The ability to locate health care in the rural setting can be difficult and is often more difficult to locate care for fertility treatments. According to the Center for Disease Control and Prevention (2016), there are 6.7% of married women aged 15-44 who are considered infertile in the United States (p.1). In addition to infertility the amount of pregnancies lost and miscarriages differ; often women do not even know they are pregnant and may miscarry before knowing; therefore, the percentage of miscarriages may not be as accurate. Miscarriage complicates "between 10% and 20% of pregnancies, and it is estimated that around 25% of all women will experience at least one miscarriage during their reproductive lives" (Sur & Raine-Fenning, 2009, p. 479). Sur & Raine-Fanning (2009) go into detail about the significance of pregnancy loss on a woman emotionally, understanding that there are different factors that might affect

women of reproductive age, and the difficulty of finding specialty care in rural communities.

Description of Phenomenon & Significance of the Problem

Infertility is a broad topic and can include many different aspects such as miscarriages, recurrent pregnancy loss, PCOS, and the difficulty of becoming pregnant for no specific reason. Miscarriages can occur for many different reasons and depending on the reason and type of miscarriage.

A complete miscarriage is when the woman passes the fetus on their own with no other interventions performed. A complete miscarriage is diagnosed when an ultrasound shows "retained tissue measuring less than 15 mm in diameter" (Sur, & Raine-Fenning, 2009, p. 480). A delayed miscarriage is "defined by ultrasound appearances of intrauterine pregnancy with reproducible evidence of absent or lost fetal heart activity, the failure of crown-rump length to increase over 1 week or persisting presence of an empty sac at less than 12-weeks' gestation" (Sur, & Raine-Fenning, 2009, p.480). A delayed miscarriage is often diagnosed at a general obstetrics appointment and usually has no symptoms. This accounts for about 3% of pregnancy losses. (Sur, & Raine-Fenning, 2009, p.480). An incomplete or inevitable miscarriage is often diagnosed subjectively from a history of passing tissue and is then diagnosed by ultrasound "when the gestational sac is no longer intact, but most frequently appears as a thickened endometrium containing irregular products of conception" (Sur, & Raine-Fenning, 2009, p. 481).

It can be difficult for rural health communities to keep valuable employees which in turn can make the ability to obtain services more difficult. "Literature shows that

recruiting providers from rural communities and providing education and enhanced training within the state increase the retention of local providers who return to work in rural communities" (Collins, 2015, p. 21). Health care providers profit from technical assistance and additional education, which has been shown to improve job satisfaction. Another major factor noted by Collins (2015) is the access to specialty services. "If rural areas continue to experience persistent health professional shortages in primary care work force, one can only imagine the impending shortage of specialty services" (Collins, 2015, p. 21). Another challenge identified is that rural health care providers must rely on government funded insurance and patients who do not have insurance coverage.

Theoretical Framework

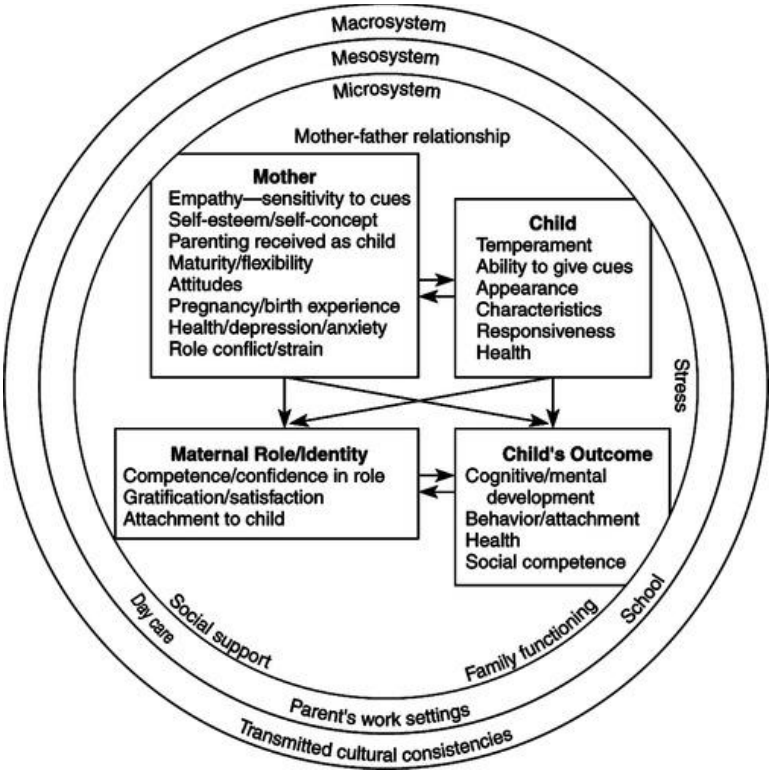

Figure 1. Model of Maternal Role Attainment. (Alligood, 2014, p. 540).

Ramona T. Mercer's (2006) model "Maternal Role Attainment Becoming a Mother" was the theoretical framework for this study. This model frames the mother's

role in becoming a mother as well as the bond and connection between the father, mother, and in this case, pregnancy.

> The process of becoming a mother requires extensive psychological, social, and physical work. A woman experiences heightened vulnerability and faces tremendous challenges as she makes this transition. Nurses have an extraordinary opportunity to help women learn, gain confidence, and experience growth as they assume the mother identity (Mercer, 2006, p.649).

In this theoretical framework attachment and bonding are the primary focus; with every pregnancy attachment and bonding is achieved in the beginning. This theory was chosen for a variety of reasons, one being that women are bonded to their baby the instant they find out they are pregnant, and there is also the aspect that this theory focuses on psychosocial aspects.

The Prevention of Miscarriage

Progesterone is an essential hormone in the reproductive system, without appropriate progesterone levels women are unable to achieve pregnancy or carry a pregnancy to term. “It induces secretory changes in the lining of the uterus and is essential for a successful implantation of the embryo. Moreover, Progesterone modulates the immune response of the mother to prevent rejection of the embryo” (Dante et al., 2013, p. 1). There are different types of progesterone that can be used which include vaginal suppository, intramuscular shots, and oral progesterone. One trial found that giving progesterone to women after recurrent pregnancy loss can lower the chances of another miscarriage. “These trials found that giving progestogen medication to women with recurrent miscarriages early in their pregnancy may help lower the rates of

miscarriage in that pregnancy from 27.5% to 20.1%" (Haas et al., 2019, p. 1). This study did not identify any method of administration better than the other. It was identified within this trial that women who took progesterone while pregnant will benefit, especially if those women had a previous history of recurrent miscarriages. "We found evidence from randomized controlled trials that giving progestogen medication may prevent miscarriage for women with recurrent previous miscarriages" (Haas et al., 2019, p. 1). Another study stated the same evidence "a finding of a significantly reduced miscarriage rate in women with a history of recurrent miscarriage was found only in studies that included women with at least three miscarriages" (Dante et al., 2013, p.5).

Progesterone is essential to carry a viable pregnancy, whether it is using progesterone in the oral or vaginal form for women who have suffered recurrent pregnancy loss early on in pregnancy, this has been proven too help prevent miscarriages. If used in the first four to five weeks of pregnancy it can decrease the risk of loss, continued until 14 weeks gestation. "Progesterone maintains the early pregnancy and is mainly secreted by the corpus luteum during pregnancy" (Hussain et al., 2012, p. 1). Not having enough progesterone build-up during early pregnancy can unfortunately cause early miscarriage. "Insufficient progesterone secretion and delayed endometrial development at the time of implantation or during early pregnancy may occur naturally or due to luteal phase defect and has been implicated as a cause of sporadic and recurrent miscarriages" (Hussain et al., 2012, p. 1). The placenta takes over producing progesterone, "…between 8 and 12 weeks of gestation, the placenta takes over this role and maintains the pregnancy thereafter" (Coomarasamy et al., 2015, p. 2141).

The Management of Miscarriage

The terms *abortion, spontaneous abortion,* and *miscarriage* are used interchangeably, unfortunately because they are all due to a pregnancy ending. *Abortion* is avoided in many aspects due to the confusion with medical abortion. The management of a miscarriage will depend on what type of miscarriage the woman is experiencing. The following are three types of management for miscarriages. Expectant is the first type of management. This is when the body is left to carry out the miscarriage without any medical interventions. Medical, is the second type, which involves the use of medications. And, the third involves a surgical intervention. This type of management depends on the type of miscarriage and the women's preference. About 20% of women choose medical management (Sur & Raine-Fennings, 2009, p. 484). According to Sur & Raine-Fennings, (2009), "Prostaglandins are used in single or divided doses. Gemeprost is administered vaginally whilst misoprostol can be administered both orally and vaginally" (p. 494). The route of administration is important because the route maybe more effective based on the dosage and type of miscarriage. The advantages of medication management include the avoiding of anesthesia and risks that are included with surgery as well as faster completion of miscarriages compared to allowing body to complete the miscarriage without any interventions. Disadvantages include pain, more bleeding, side effects of medication usage, and the possibility of still needing surgery. In up to 36% of cases surgery is still needed (Sur, & Raine-Fenning, 2009, p. 484). With surgical interventions the outcome is predictable; there is a low rick of needing additional interventions, and there is a reduced duration of bleeding. The disadvantages include

risks associated with anesthesia and possible surgical complications. (Sur, & Raine-Fenning, 2009, p.484).

There are three methods of management once the miscarriage has been diagnosed. Seventy percent of women choose to wait for the pregnancy to resolve with no interventions; this is classified as expectant (Sur, & Raine-Fenning, 2009, p. 481). A medical management is another intervention; this is when medications are used to complete the miscarriage. The last method involves a surgical intervention which people are most familiar. This involves the dilatation of the cervix to remove the remaining pregnancy. There are considerations to be made in addition to choosing a method and that involves women and their emotional well-being. (Sur, & Raine-Fenning, 2009, p. 480). While some women choose other ways of management, many decide to use expectant management. "Studies have suggested that more women prefer expectant than surgical management" (Sur, & Raine-Fenning, 2009, p. 481).

Miscarriages and Infertility Psychological Effects

Unfortunately, depression is a factor that affects both the man and the woman after a miscarriage. "The prevalence of depression in this population affects 34-54% of the wives and 23-32% of the husbands" (Wiweko, Anggraheni, Elvira & Lubis, 2017, p. 145). After diagnosing a miscarriage half of women suffer significant psychological effects, which may last up to 12 months (Bottomley, & Bourne, 2009, p. 464). There are various reasons for depression and stress such as age, reproductive issues, hormonal imbalances, and possibly because of the different type of interventions. Counselling will reduce the "incidence of adverse psychological sequelae following miscarriage and its management" (Sur & Raine-Fenning, 2009, p.488). Pregnancy loss can affect the

couple's relationship drastically. Robinson (2014) suggests grief is defined in *Pregnancy Loss* in three different dimensions:

> Chronic grief that is excessive in duration; delayed grief that has been inhibited by suppression; exaggerated grief that is exacerbated by multiple factors such as marginalization, shame-induced stigma, or physiological trauma; and masked grief that results in somatic symptoms or alexithymia (p.172).

Miscarriages can take a toll on family and friends as well. When a baby is expected, often questions are asked about the baby when they are unaware of the situation; this causes more grief. In addition to the psychosocial issues that affect women after a miscarriage, the stress of finding proper care can also affect them. The worry that families must go through can affect them negatively as well. Important aspects of rural health care are understanding the needs of the community members "…countries face major challenges in service delivery, human resources, governance, transportation, financing, communication, and in some regions corruption" (Strasser, Kam & Regalado, 2016, p.396).

Infertility and miscarriages affects every couple differently, and counselling is often offered after a miscarriage to allow both members to cope in their own way. "Infertility has been recognized as a public health issue worldwide by the World Health Organization (WHO), and has the potential to threaten the stability of individuals, relationships, and communities" (Tao, Coates, & Maycock, 2012, p. 71). Infertility can contribute to marital problems and thereby decrease the quality of life for couples. Two quantitative studies were obtained on the matter of quality of life and relationships and compared within a study by Tao, Coates, and Maycock (2012). Both studies considered

education level, age, and sexual satisfaction. According to Tao, Coates, and Maycock (2012), the results showed that male infertility did not affect the marriage negatively and, in fact, males experienced a higher marriage satisfaction than their wives. Also, "infertile females had significantly less stable marital relationships compared to fertile females, which was associated with their socio-demographics and treatment experience" (Tao, Coates, & Maycock, 2012, p. 72).

A qualitative study completed by Smith, Frost, Levitas, Bradley and Garcia (2006) involving a women's experiences with three early miscarriages found

> Over the last 20 years there has been much psychological and medical research exploring the consequences of early miscarriage indicating that responses can include grief, anxiety, depression, guilt, self-blame, stress, relationship problems, and even suicide (p. 198).

Many of the women in the study also voiced their feelings on needing to see a baby after they completed their miscarriage. Another group of women felt scared of what they might see after the miscarriage occurred. The group that felt the need to see a baby after a miscarriage occurred wanted to say goodbye to their baby. These views often help make the decision on which method is chosen to complete a miscarriage, such as naturally without medical assistance, surgical, or medical. (Smith et al., 2006, p. 198).

Following a miscarriage there are psychosocial considerations that need to be taken into consideration. The psychosocial complications with miscarriages appear in couples who are facing infertility problems as well and include "low self-esteem, anger, sadness, jealousy toward other couples who already have children, anxiety, and finally, depression" (Wiweko, Anggraheni, Elvira, & Lubis, 2017, p. 145). There are counselling

programs that are offered to help alleviate the after effects of pregnancy loss. It is recommended that physicians evaluate women after a miscarriage for predisposing risk factors. (Lok & Neugebauer, 2007, p. 230). “The underlying risk factors predisposing a miscarrying woman to psychological morbidity include a history of psychiatric illness, childlessness, lack of social support or poor marital adjustment, prior pregnancy loss, and ambivalence toward the fetus” (Lok & Neugebauer, 2007, p. 229).

Effects of Multiple Miscarriages on Health Behaviors

According to Kinsey, Zhu, & Kjerulff (2014) women are affected more emotionally during consequent pregnancies due to the fear of miscarriages. Women “…may be at increased risk for pregnancy-related anxiety and greater health care utilization compared with women without a history of miscarriage” (p. 155). During this study it was found that women who had a history of multiple miscarriages were more likely to smoke, actually four times more likely to smoke during pregnancy as women without the history of miscarriages. Women with multiple miscarriages also begin prenatal care sooner than women who do not have a history.

> They initiated prenatal care earlier (7.0 vs. 8.2 weeks gestation), had higher odds of third trimester emergency department visit, higher odds of hospitalization during pregnancy, and twice the mean number of third trimester emergency department visits and hospitalizations during pregnancy (Kinsey et al., 2014, p. 158).

Women who have had multiple miscarriages and turn to health care benefit greatly from having fertility health care locally.

Reviewing the Types of Miscarriages

Miscarriages affect a lot of women both physically and mentally. “Miscarriage is the most common serious pregnancy complication affecting approximately 30% of biochemical pregnancies and 11-20% of clinically recognized pregnancies” (Bottomley, & Bourne, 2009, p.463). Forty-five percent of women will have retained tissue after a miscarriage, and 6% of these miscarriages are ectopic pregnancies (Bottomley, & Bourne, 2009, p.463). An ectopic pregnancy occurs when a fertilized egg is implanted outside the uterus and begins to grow, this generally begins in the fallopian tube (Mayo Clinic Staff, 2018). According to a study conducted by Bottomley, and Bourne (2009), miscarriage affects one in five couples. The rate of miscarriages is said to be increasing due to women finding out they are pregnant much faster and the increased use of technology. (Bottomley, & Bourne, 2009, p. 464). In addition to miscarriages there are recurrent spontaneous abortions (RSA) which occur in 1% of fertile couples. According to “*European Society for Human Reproduction and Embryology and Royal College of Obstetricians and Gynaecologists* a RSA is defined as three or more consecutive spontaneous abortions, whereas the *American Society for Reproductive Medicine,* defines it as two or more SAs” (Pereza, Ostojić, Kapović, & Peterlin, 2017, p. 150), but these entities both recommend that a woman with three or more miscarriages are included in studies for research purposes.

Rural Health Care

Weeks et al. (2004) identified discrepancies in the quality of life between people who live in a city setting versus those who live in a rural setting. The results of this study identified that the quality of life was suggestively low in those who live in the rural

setting vs those who live in the urban setting. Those who live in the rural areas had more health issues. “When compared with their urban and suburban counterparts, veterans who live in a rural setting have worse health-related quality-of-life scores” (Weeks et al., 2004, p. 1762). It is difficult to provide access to full health care services in the rural setting. Federal funding can influence the access to health care in the rural setting but it can be difficult to keep physicians in these areas, especially those who are specialists.

There are many issues that can occur regarding rural health care and the ability to obtain services. According to Collins (2015), “Collaboration, successful recruitment and retention, availability of specialty services, quality care, and cost effectiveness are some of the issues that must come into discussion about access to services” (Collins, 2015, p. 20). These factors are important in seeking any type of rural health care and are equally important services related to miscarriages.

Pregnancy-Related Complications

Being overweight contributes to many pregnancy complications which include the risk of miscarriages, stillbirths, birth defects including spina bifida, elevated blood pressure and preeclampsia (Watson, 2014, p. 1). Being overweight also obviously makes it more difficult to get pregnant. If patients are overweight prior to conceiving the weight they need to gain is obviously adjusted. (Watson, 2014, p. 1).

> Obesity may also lead to a poor pregnancy outcome, such as sudden and unexplained intrauterine death, and in women with polycystic ovary syndrome (PCOS) receiving infertility treatment is associated with an increased risk of miscarriage. The reason for increased amount of miscarriages in obesity is unknown (Lashen, Fear, & Sturdee, 2004, p. 1644).

The study completed by Lashen, Fear, and Sturdee (2004) looks at the correlation between obesity and the risk of spontaneous miscarriage, in pregnancies after six weeks gestation. This study looks at early miscarriages, which is a miscarriage that occurs between 6-12 weeks gestation; late miscarriages, which is 12-24 weeks gestation; and recurrent early miscarriages which is when three or more miscarriages occur. There were two groups compared regarding their history of how far along they were when the miscarriage occurred and their BMI; obese women are defined as those with a BMI of >30 kg/m2, and a normal BMI is defined as being between 19-24.9 kg/m2. Miscarriages occur 1.25 times more often in obese women compared to women with a normal BMI in early miscarriages, twice as often for late miscarriages, and four times more often in recurrent miscarriages (p. 1645). "Spontaneous miscarriage affects 12-15% of all pregnancies. Eighty percent of miscarriages occur before 12 weeks gestation, and the majority are due to chromosomal abnormalities" (Lashen, Fear, & Sturdee, 2004, p. 1645**).**

There was a study that found there is an increased risk of miscarriages in obese women who are undergoing fertility treatments. This study did not find correlation between early miscarriages, obesity, and PCOS; therefore, obesity would be an independent risk factor for miscarriages. (Lashen, Fear, & Sturdee, 2004, p. 1644). The exact reasoning for miscarriages is unknown but is linked to obesity, according to another study. It states that "altered oocyte quality, altered endometrial receptivity, or inflammatory reactions being suggested as possible mechanisms" (Arora, 2011, p. 41) for miscarriages. In this same study it also linked that obesity and inflammation play a role in miscarriages, "obesity also causes significant impairment of endothelial function" (Arora,

2011, p. 41). Most of the studies state that there is a correlation between the two especially with fertility treatments, obesity, and miscarriages. More studies need to be completed on the matter of obesity and miscarriages due to the information collected already not being as vast.

Inducing ovulation is often the treatment of choice to achieve pregnancy in women who do not ovulate or have PCOS. Anovulation is often a problem in women who are overweight. Obesity can affect reproduction for many different reasons and weight loss is often a first treatment choice for providers, but this is time consuming and difficult. Diet changes and exercising and can help achieve ovulation. There are several medications to help achieve ovulation as well. Clomiphene citrate, otherwise known as clomid, is one. “In properly selected PCOS patients, the cumulative pregnancy rate after six cycles of treatment exceeds 60% and after 10 cycles 90%” (Messinis et al., 2015, p. 482). The next medication mentioned is Letrozole. It is equally effective in inducing ovulation in women that have PCOS (Messinis et al., 2015, p. 482). Due to bad effects Letrozole is considered off label for infertility treatments.

Bariatric surgery is a treatment choice for women who are obese, have PCOS, and are trying to get pregnant. “In a prospective randomized evaluation, bariatric surgery resulted in weight loss, a decrease in serum androgens, amelioration of insulin resistance and restoration of ovulation and normal menstruation within 6 months” (Messinis et al., 2015, p. 482).

Summary and Future Directions

There is a close relation with miscarriages, infertility, PCOS, and obesity. This writer was able to find a vast majority of research on these matters. More research on

why obesity contributes to miscarriages would be beneficial in the future. Many studies stated there was a correlation, but discovering this connection has not been thoroughly met yet. There was also a minimal difference in the studies with relation to the number of women who suffer miscarriages and who are infertile. This is based off each study but was interesting to see the difference.

Quality of life is always a consideration when a miscarriage has occurred, not just for women but for men as well. Depression and anxiety are major factors that can affect future pregnancies and the current state of mind after a miscarriage. Often, counseling is recommended after a miscarriage occurs.

There are many ways that a miscarriage can be managed, such as medications, waiting it out, and surgery. These choices are left up to the patients but this can often contribute to psychosocial issues as well.

Lastly, the aspect of rural health and treatment options were covered. There was minimal information on the correlation of rural health and infertility care articles on rural health care were easy to locate but on specialty care it was difficult to locate information on. This is a concise topic so articles on rural health were used rather than miscarriage specific, even if these were broad. More research on rural health care in the specialty area would be beneficial.

Chapter III

DESIGN

Methodology

This study is a qualitative research study of rural women who have experienced multiple miscarriages. Chapter III will address the research design, interview questions, sampling, Institutional Review Board (IRB) approval and analysis methods.

Within this study, the objective is to interview women who have had recurrent miscarriages. The goal is to better understand the emotional and treatment impact that recurrent miscarriages have on women living in rural medically underserved areas.

Project Research Design

A qualitative study was completed using a series of interviews performed in the rural area of Southeast Kansas regarding miscarriage history and the women's experiences. "Qualitative method is used to understand people's beliefs, experiences, attitudes, behavior, and interactions. It generates non-numerical data. The integration of qualitative research into intervention studies is a research strategy that is gaining increased attention across disciplines" (Pathak, Jena, & Kalra. 2013, p. 1).

Locating women to interview was done through social media, women were chosen who had a series of three or more miscarriages. The goal was to locate five women to interview; it was discussed that it might be appropriate to interview more

depending on saturation. The research consisted of structured interviews with qualitative questions. The study examined access to fertility care in rural communities and the impact of that access on women's options regarding their health care. The health care provided, or not provided, has a large impact on women after a miscarriage. Rural health care is often difficult to access and might negatively impact the women even more.

Semi-structured interviews guided by one open-ended question was used to explore the views, experiences, and beliefs of the participants. According to Rubin & Rubin (2012) semi-structured interviews consist of several key questions that help to define the areas to be explored but also allows the interviewer or interviewee to diverge in order to pursue an idea or response in more detail. This interview format is used most frequently in healthcare, as it provides participants with some guidance on what to talk about, which many find helpful. The flexibility of this approach allows for the discovery or elaboration of information that is important to participants but may have previously been thought of as pertinent by the researcher (Rubin & Rubin, 2012). The researcher listened to what women had to say about their experiences and followed up with more questions for clarification or when needed to increase understanding of the miscarriage occurrences as they are described by those participating in the study. In order to capture the data, the interviews were recorded using a digital recorder. The recording of the interviews made it easier for the researcher to focus on the interview content and the verbal prompts and enabling the transcriptionist to generate verbatim transcript of the interviews later. The goal was that the interviews continue and were led by the interviewees, information was given that they believed was important and relevant to their experiences; this was the goal so that saturation did not occur within the first few

interviews with the participants and more information is able to be collected through multiple interviews.

Target Population

The target population for this study focused on women who have had recurrent miscarriages, preferably three or more, and live in rural healthcare settings. Focusing on rural healthcare was important for this study and will benefit the understanding and identifying of where fertility care may be needed for those living in rural areas. A medically underserved rural area of Southeast Kansas was utilized as the target area for selection of a sample willing to participate in the study.

Target Population Recruitment

Social media were the areas of focus in recruiting women for this study. The goal was to identify a few women that had previously had three or more miscarriages and to reach out through email. This began the recruitment process and continued with snowball sampling to identify more women. In snowball sampling "…research participants recruit other participants for a test or study. It is used where potential participants are hard to find" (Snowball, 2014).

Inclusion & Exclusion Criteria

Criteria for inclusion was that women have had a previous miscarriage and for the goal of this study of recurrent pregnancy loss (RPL), the number of miscarriages being three or more pregnancy losses. The women must be from the rural area of Southeast Kansas. Women from urban areas are excluded from the study. An underlying issue such as polycystic ovarian syndrome (PCOS) is an additional factor that will benefit the study; looking at different underlying issues can improve this study.

Protection of Human Subjects

Subjects' privacy was fully protected throughout this research study. This study involves human subjects, so authorization to proceed with this study was obtained through the Irene Bradley School of Nursing and the Institutional Review Board of Pittsburg State University. Appropriate steps were taken to protect the involved participants privacy such as keeping their information confidential, and these steps continued to be taken so the violation of privacy did not occur. The recordings were kept in a locked area where they cannot be accessed by anyone but the researcher, and documentation was under passcode during the process.

Instruments

The researcher is the instrument in semi-structured qualitative interviews (Rubin & Rubin, 2012). This researcher conducted in-depth interviews and reflected on the meaning of observation and interview data during and after the interviews were completed. To guide the interviews the researcher used an open-ended interview question to begin and guide the interview process. The open-ended question was used to encourage the interviewee to share their experiences; such questions benefit the researcher as unexpected aspects of the phenomena can be discussed. An open-ended question is a free-form, and the interviewee can designate how they want to respond and how they want the answer to go rather than yes/no responses (Farrell, 2016).

The following is a list of open-ended questions that guided the researcher's interviews with participants in addition to the initial question asked:

1. Can you tell me about your experience with pregnancy and the outcomes of your pregnancies?
2. Have you ever consulted a fertility specialist?

   If yes: Can you talk about your experience seeing a fertility specialist?

   If no: Can you talk about your reasons for not consulting a fertility specialist?
3. What are some of the reasons for the miscarriage(s) you have discussed with your doctor?
4. Are you still thinking about becoming pregnant? Has your decision to try to become pregnant again/not to try to become pregnancy again been affected by the outcomes of previous pregnancies? Including the ability to seek proper care? Can you explain?
5. Why were costs and location of specialist's factors in receiving medical care?
6. Discuss medical treatments you have had, including alternative medicine, to address problems with pregnancy after miscarriage or when you planned to become pregnant again?

The interview process was no longer than one hour. The number of participants interviewed continued until saturation occurred. At the discretion of the interviewer additional interviews with those participating in the study maybe performed if deemed essential for clarification or greater understanding of the phenomena of experiencing multiple miscarriages in rural area with limited access to specialty health care.

Procedure

The proposed interview questions that guided the researcher's interviews were reviewed by members of the project research committee and changes were made based on their recommendations. The research proposal and interview questions were approved

by the Irene Ransom Bradley School of Nursing and the University Institutional Review Boards (IRB) prior to the interview process starting.

Potential participants were identified through social media. Following the identification of possible subjects who met the required inclusion criteria, an e-mail was sent out explaining the study and inviting them to participate. Prior to beginning the interviews each participate signed an informed consent form (see Appendix A).

Using purposive snowball sampling additional participants were identified, as needed, and contacted by the researcher. Upon beginning the interviews, the goal was that other women were identified, which was successful. It has been this researcher's experience that most women who have had a miscarriage knows another woman who has also had a miscarriage.

The interview began with an open-ended question asked of all participants and additional subsequent questions were asked throughout the interview process as the researcher deemed necessary or appropriate. Interviewees were encouraged to lead the interview so new information was obtained, as every woman's experience is different. The overall goal of this study was to explore and better understand any identifying differences, similarities or treatment experiences of women who have experienced RPL in rural, underserved health care areas. The desire of this researcher was to collect data that would include information on the women's miscarriages and their healthcare. A focus of some of the interviews pertained to treatments and the abilities to obtain care in the rural health setting.

The researcher gained experience in conducting an interview by performing a mock interview. The mock interview was recorded, and the researcher reflect on

decisions that took place during the interview that positively and negatively influenced the interviewee's responses during the interview to prepare for the actual interviews with the study participants.

Treatment of Data/Outcomes/Evaluation Plan

The researcher's plan was to ask each participant an initial open-ended question about the participant's experiences following multiple miscarriages and gather data related to medical treatments, use of fertility specialists and other concerns with access to care and possible financial burden following that question and within the interviewing process. The interviews were recorded and transcribed using a digital recorder. The following is the process for analyzing qualitative data

1. In evaluating the data, the researcher first labeled the data by identifying patterns or similarities and differences. These similarities or differences were then coded into categories or themes.
2. During this process, the researcher explored personal feelings and experiences that influenced the study analysis and an awareness not to integrate these personal biases in the interruption of the data.
3. Examples demonstrating themes identified within the research data that may be relevant to focus areas were then reflected in the written research report.

Evaluation Measures Linked to Objectives

Evaluation measures within this study are meant to be completed to benefit women in the future who might have a miscarriage in the rural health setting. It would be beneficial for women to be able to obtain the proper treatment in this event, rather than seeking treatment where providers are unaware of the needs these women might have.

Currently, there are no known infertility specialists in the area. This study attempted to understand the beliefs and feelings of women who may have had to travel to see a specialist or were not able to see a specialist due to distance or cost.

Outcomes/Evidence-based Measures are Appropriate for Objectives

The goal of this study was to understand the emotional and treatment impact that recurrent miscarriages have on women living in rural, medically underserved areas. The objectives of this project were to discuss and understand how miscarriages impact women. Women were interviewed from rural areas that have limited access to specialists and provide the researcher with their experiences and explore their thoughts.

Plan for Sustainability

The challenge for this research project is the ability to present and share the findings and results with others. Dissemination of the results will be accomplished through a poster presentation at a local conference or through publication of a journal article. It is this researcher's goal to prepare and present a poster presentation to disseminate the results of this study.

Summary

According to Gray, Grove, & Sutherland (2017), an objective of a qualitative research study is to lead to an understanding of a phenomenon in a particular situation. The insights from qualitative studies can guide nursing practice and aid in the important process of building nursing knowledge. Understanding human behaviors or experiences, is a central concern of nursing. This required that participants interpret the experiences for the researcher and then the researcher interpreted the explanations provided by them. The objective of this research study was to attempt to understand the experiences of

women who have experienced multiple miscarriages in rural underserved areas. Results of the study will be used to improve access to rural specialty care and hopefully improve the ability to seek care closer to home for women who experience multiple miscarriages.

Chapter IV

RESULTS

The goal of this study was to gain a greater understanding of the experiences and feelings of women in rural areas following multiple miscarriages, identify related factors, and assess the impact and support of health care providers. The research question asked was "what are the emotional and other impacts of experiencing multiple miscarriages, and what role do health providers play?" Study participants were asked about a) distance traveled to seek infertility treatments after a miscarriage, b) financial concerns, c) access to health care and specialists, d) support systems, e) feelings toward seeking repeated treatments, and f) any feelings of guilty or self-blame.

Study Participants

Study participants were five rural, lower to middle class white women ranging in age from 26 to 43 years old. Study participants had a wide variety of educational backgrounds from stay at home mothers with high school diplomas to women with college degrees. Study participants had had at least three miscarriages. Each participant completed an hour-long interview, during which they were asked about their history of miscarriages and about their feelings following their miscarriages. The study included participants with commercial health insurance and participants covered by Medicaid. Table 1 shows participants', number of prior miscarriages, week of pregnancy at the time

of their most recent miscarriage, medications taken during pregnancy, and time elapsed between confirmation of pregnancy and the start of progesterone treatment.

Table II.

Demographics (N=5)

	Age	**Number of miscarriages**	**Weeks of miscarriage**	**Insurance status**	**Medications**	**Time elapsed before starting progesterone**
Participant 1	31 years old	3 miscarriages	6 weeks (2), 11 weeks	Private Insurance BCBS	Aspirin, Progesterone, folic acid, prenatal. Plus Clomid and Femera cycles	1 week +
Participant 2	26 years old	3 miscarriages	15 weeks, 5 weeks (2)	Medicaid	Aspirin, Progesterone, folic acid, prenatal	1 week +
Participant 3	26 years old	3 miscarriages	5 weeks (3)	Medicaid	Progesterone, folic acid, prenatal	5 days
Participant 4	29 years old	3 miscarriages	12 weeks, 5 weeks (2)	Private Insurance BCBS	Progesterone, folic acid, prenatal	2 days
Participant 5	43 years old	3 miscarriages, 1 pre-term	6 weeks, 8 weeks (2), live birth at 24 weeks 4 days	Private Insurance BCBS	Folic acid and prenatal	Not given

Analysis of Project Questions

To increase reliability the researcher kept the subjects in the project unknown to others, although the community is small, this was still possible due to confidentiality and discussing with each participant that this would help the study to keep the interview to themselves. Validity and reliable methods were also focused on, each participant understood the need to provide factual and truthful information with an emphasize on their own experiences. To increase dependability the researcher recorded the interview and later transcribed so that attention was on the interview participant. Bias was avoided by the researcher as data was constantly compared, only after the interviews were completed.

Guilt and Self-blame

Across all interviews guilt and self-blame was discussed in depth and found to be a major problem following the miscarriages. From the interviews it was obvious that all of the participants felt that it was their fault they had a miscarriage, and they did not consider an underlying cause for the miscarriage but rather went directly into blaming themselves for the loss. Guilt was also a major factor to these women, they felt guilty for not being able to carry a baby to term and guilty for letting others down. Participants engaged in a vast amount of self-blaming self- talk, from “what did I do wrong?” to “what could I have done differently?”. The focus was always “I” and not a single participant considered other possible reasons for their miscarriages.

Marie who has had 3 miscarriages and 3 live births stated that once she had her first miscarriage she felt “sad,” but after her second miscarriage she had an immense amount of “guilt and insecurity.” Marie stated that she blamed herself for the

miscarriages because “I was losing weight due to working out and counting macros and calories, I was addicted to losing weight which caused infertility and no periods.”

Dawn had 3 miscarriages including a second trimester miscarriage at 15 weeks when she was pregnant with a girl. She reported feeling a great deal of guilt and said, “I feel guilty and like it was my fault I lost her; it feels as though I did something wrong. I had carried a full-term baby before. Why was it so hard to do that again?” Ann reported she felt immense guilt because she had thought she was doing everything right, and she already had one successful pregnancy. Ann blamed herself because she felt she had not started the progesterone in time, and she felt that she was too stressed with work and family. She also said that she felt that she was alone through her miscarriages and that she was more emotional than she “should” have been. During our interview, Ann stated, she believed her hormonal state following the miscarriage were the source of a majority of her feelings of guilt toward herself and anger toward her spouse. She stated that she still “feels” she could have done something else to prevent the miscarriages, although she knows that there was nothing she could do.

Kathryn, who was 39 at the start of her miscarriage journey, reported feeling a great deal of guilt due to her age. She felt that if she had not waited so long to begin having babies, she would not have had trouble achieving healthy pregnancy. However, in Kathryn’s situation, her most recent pregnancy resulted in a preterm baby that, although was born alive at 24 weeks 4 days, passed just a few days later. The situation was an enormous source of guilt for Kathryn because her pregnancy was high-risk, and her early delivery occurred because her water broke following heavy exertion at work. Kathryn felt

that the extra physical exertion, which could have been avoided, contributed to the loss of her baby

Depression

Depression was identified and discussed within the interview as a major issue after the miscarriages. Depression often comes after a major life changing experience and in these women their experiences were life changing. Luckily, support systems can help when someone goes into a deep depression but unfortunately being alone can bring up these bad memories. In describing her feelings after the miscarriage, Ann stated, “when I would lie in bed at night, I would just cry,” and she felt that her thoughts would race causing her to feel sad and guilty again. All five participants reported that they felt “alone” even though they had a huge support system. Marie stated, that she did not want to join in regular family functions or contribute to the household although she has two older boys she was raising as well.

Fear

When asked about their feelings related to trying to get pregnant after their miscarriages, all five women communicated immense fear-of having another miscarriage if they were to get pregnant again or even the fear of never getting pregnant again. Some said they were not sure whether they actually wanted to try again because they were worried that it might end in a miscarriage. Taylor stated, “I just kept having miscarriages every time I got pregnant, I didn’t think I would ever be a mom.” While Ann said, she and her husband both felt that they did not want to try again because she’d had three miscarriages in a row and felt if she had another one, she would not be able to handle the heartache, and their marriage wouldn’t survive.

The ability to become pregnant was also a fear of most of the women while also carrying a term pregnancy without any complications, one mother stated, “I just thought if I could get pregnant one more time, it would be the time I can carry the baby to term, that for once it would work out for us and we would make it.” Marie’s stated that her emotional feelings after her miscarriages caused problems in her marriage, and she and her husband later decided to stop trying to have a third child. As a couple they felt that it was not worth their marriage or Marie’s health to keep going through miscarriages or fertility treatments.

Support System

Support systems are important for many aspects of life, but they are especially important when a woman is going through something so immense and devastating as a miscarriage. Having the proper support is important because without it, a woman can feel alone and may also take longer to grieve. Kathryn stated, her biggest support system was her daughter who was then a middle school student saying, “Kelly was always there for me when I needed her,” her husband was also very supportive, but she felt that he did not fully understand her “need” to have another baby. Ann reported she did not feel that she had a good support system within her close family. “I felt that my husband was not supportive during the miscarriages and neither was my mother or sisters. I felt that nobody understood me. I felt like everyone thought I did not need another baby. I think now maybe those feelings were caused by my hormones, but it really was how I felt at that time.” She even felt that her provider kept “blowing her off” each time she would call, which resulted in several switches to various OB providers in hopes of finding better care. Ann went on to say, “after my third miscarriage I asked if I should see a specialist,

and I felt the doctor was not helpful or compassionate, so I found another OBGYN in the area. I then got pregnant again and was put on progesterone, and the sonogram showed a live viable pregnancy but the same thing happened. I felt the same way, no compassion and felt that since I was only 5 weeks pregnant, nobody felt the baby mattered, I felt that since I was so early that they did not think the baby was real."

Dawn, on the other hand, felt that her family and friends were her closest supporter but she also felt that her provider was a close supporter as well. She felt she had no complaints about her doctor and said that he was wonderful through the whole process and very understanding. She felt that she was in good hands and never felt that he was not compassionate.

Contributing Factors

While the mothers in this study all reported various forms of guilt and self-blame, this study suggests other, external factors that may have contributed to the failed pregnancies. Most significant among this group was consistent difficulty in obtaining progesterone in a timely manner. Women in this study experienced a delay of up to one week, and sometimes two, in obtaining it.

Dawn stated, "I called to tell them I was pregnant again, I wanted to request my progesterone and make an appointment, the lady tried to make my appointment one month out and said that the doctor would evaluate at that appointment if I needed the medication or not." Dawn stuck with telling them she needed her medication and was able to obtain the progesterone vaginal suppositories within 7 days from getting a positive pregnancy test. Ann stated, that she would find out she was pregnant at 4 weeks, her provider would draw her blood and put her on the progesterone but that would still

take her 4-5 days to get started on. By the time she started on the medication she was having her miscarriages at 5 weeks.

Taylor stated, she only waited two days to get her progesterone filled and that was because she found out she was pregnant on Christmas Eve. She followed up with her provider the following week and he immediately sent in the medication, while another mother Kathryn, stated that through her entire journey, she was not offered progesterone during any of her pregnancies. Kathryn stated, “I asked for it, but they acted like it wasn’t a big deal and that I didn’t need it.”

Other issues identified regarding recurrent miscarriages include the difficulty of accessing medical care in a timely manner, especially for rural residents, the fact that women are unable to see their provider in a timely manner they might be schedule a week or two out rather than the next day or two. Limited finances, lack of health insurance or limited coverage, lack of education or information about the proper protocol to prevent another miscarriage are issues that attribute to recurrent miscarriages. Women do not always understand the proper protocol after having a miscarriage because they are not properly educated or do not see a specialist due to lack of specialists in their area.

The inability to obtain an appointment in a timely manner, for example if there is not a provider in rural Southeast, Kansas to see the patient and they must drive 45 minutes or more and cannot be seen for a week and still cannot obtain the proper medication until being seen then there is an issue with this. Women continuing to work while high risk or feeling that they cannot take leave because they do not want to miss out on the 12 weeks at home with the baby is an issue as well; working, staying on their feet all day, not being able to take breaks, or exerting themselves too much when they

should be taking it easy. Most women want to continue to contribute to the family while pregnant and find it hard to understand that this is not always attainable, especially when they run into the issue of a high-risk pregnancy.

Insurance, financial situations, cost, and transportation are all factors that can be included into blame. Is there an issue with finances because the patient is not good with money or because the treatment cost is excessive? Transportation can be an issue with the patient having a nonreliable vehicle and the provider is an hour away so therefore they are unable to be seen. Some providers do not accept all insurances which in turn means that the patient is unable to seek care with that provider, this can be a portion of blaming. There is a huge lack of specialists and providers in poor, rural, medically underserved areas, and most women must drive 1.5-2 hours to seek treatment this is another important factor to take into consideration.

Lack of education or understanding following a miscarriage can be a contributing factor, women might not understand that they are supposed to report certain symptoms that might be a sign of a fever. Or they might not understand a certain medical condition they were diagnosed with early in their pregnancy which means they are at increased risk of miscarriage if they do certain things, such as having sexual intercourse if there is a placenta previa. Even if the patient does not understand certain intakes with food and hydration, and certain environmental factors to avoid. Education is an important factor along with communication for a woman after a miscarriage or with a high-risk pregnancy.

Conclusion

The main purpose of this study was to identify woman's feelings, support system, and their grieving process after repeating miscarriages. It was also used to identify any medications or treatments sought for miscarriages and pregnancies. It was identified that most women experienced an immense amount of guilt and self-blame following their miscarriages. The average number of miscarriages each woman had was three and the average amount of weeks of miscarriage was 5 weeks, although there were some outliers of 15 weeks and a 20+ week live birth that was included in the study. Difficulty obtaining progesterone in a timely manner was a problem that most woman seemed to encounter.

Chapter V

DISCUSSION

This chapter discusses the implications of this research and its application to future practice. The most significant theme that emerged from the interviews was the extent to which living in a medically underserved rural area affects women's ability to obtain effective medical care and consequently may impact their ability to maintain a pregnancy.

Relationship of Outcomes to Research

The overall purpose of this study was to gain a greater understanding of the experiences and feelings of women in rural areas following multiple miscarriages. The women included in the study had at least three miscarriages and lived-in rural areas. It was discovered that study participants found it difficult to get the appropriate medications from their providers in a timely manner. Absence of effective support systems, the difficulty of travel to the provider's location, and cost of fertility specialists were also concerns raised by women during the interview process.

Psychological Effects

Major data that was gathered during the interview process fell within that of the psychological aspect; guilt and self-blame, depression and fear of future loss. Women can be affected with depression and guilt as much as 50% of the time following a miscarriage

(Smith et al., 2006, p. 198) and this definitely occurred in this study population. All of the women reported grief, depression, guilt, self-blame, stress related to trying to get pregnant and the loss of pregnancy. Smith et al (2006, p. 198) identified research that indicated early miscarriages can have consequences that can include "grief, anxiety, depression, guilt, self-blame, stress, relationship problems, and even suicide" (p.198).

All women during the interview voiced concerns and fears of having another miscarriage and this was also identified during the review of the research literature. One major aspect found during the research was that many women felt the need for a baby after completing their miscarriage, Smith et al. (2006, p. 196)., which was also feelings of women during the interview process of this study but was not something women needed immediately. The women needed to grieve their loss and felt that they needed to have time to get over their miscarriage.

Consistent with the literature on emotional and psychological reactions to miscarriage (Kinsey et al., 2014, p. 158), the participants in this study reported that they blamed themselves. Moreover, the women in this study reported that feels of self-blame after losing their babies caused marital problems as well as depression, grief, and guilt. These feelings were also identified by Smith et al (2006, p. 196).

Rural Health Care

Overall, it was identified that there was a lack of rural health care in the area of the interviewees. All women had to travel two or more hours to seek specialty care following their miscarriage. One participant, Marie, was seen by her health care provider two hours away each week, missed work, paid babysitters for her two other children, paid for gas to get there, as well as lost time for the appointments. There were no specialists

for fertility care or recurrent pregnancy loss in the rural community that these women live. While this research found a lack of specialty providers in the medically underserved area represented by this study, the literature also shows that people who live in rural areas have more health issues compared to those in urban areas (Weeks et al., 2004, p. 1762). It is difficult to fund physicians in self- supporting clinics in rural, but relocating federal funding to rural areas would be beneficial.

Progesterone

The inability to obtain progesterone in a timely manner was noticeably difficult for women within the study. Although women were able to obtain progesterone within days of finding out they were pregnant two were unable to do so; two women were unable to obtain progesterone for over a week and another was never offered progesterone. According to the literature adequate progesterone levels are needed for successful implantation and growth of the fetus (Dante et al., 2013, p. 1). Further literature states that not having enough progesterone build-up can cause a miscarriage (Dante et al., 2013, p. 1). In the future better communication between providers, secretaries, nurses, and the patient would better benefit the patient and her pregnancy. If the patient found out she is pregnant on the weekend it would benefit her if she was able to call her OBGYN or even her regular provider to have a prescription called in for the appropriate medication.

Observations

An interesting observation noted is the distance traveled to obtain fertility treatments. Two hours is a long distance to travel to seek medical treatment not only in the hopes of obtaining pregnancy or preventing miscarriage but also after becoming

pregnant. Another important observation noted is the long-time frame that was waited by the providers' office to prescribe progesterone for some of the women after they tested positive for pregnancy. This wait might be the lack of communication on the doctor's office part, the lack of communication to the women, or both; but some of the women had to wait longer than they should have for the needed medication to lower the risk of miscarriage. This is not only an important observation; this is also something that would be worth changing in the future.

There are several implications to be aware of within this study. Time is often a limited commodity for working women and families which often becomes a factor as time is spent traveling to and from appointments, time waiting to see the healthcare provider and additional time for testing and lab work to be completed. This travel would require the patient, as well as the significant other, to miss more work, and schedule more time with a babysitter if they had other children. One couple interviewed did have three other children in which they had to obtain care for while they made the travel to and from the city to seek medical treatments.

Outcomes

As mentioned earlier, guilt and self-blame were a common finding that occurred throughout the interviews, and this was worrisome. From the interviews it was obvious that all of the participants felt that it was their fault they had a miscarriage, and they did not consider an underlying cause for the miscarriage but rather went directly into blaming themselves for the loss. Guilt was a common finding because most women felt that they were unable to carry the baby and they were at fault.

A reassuring finding during the interview process was the positive support systems that the women had following their losses. All women voiced that they had some sort of support system. Support mentioned included their provider, spouse, older children, family, or friends. A positive support system is important in any type of loss and especially important in the loss of a baby when support is needed.

Theoretical Framework

Ramona T. Mercer's (2006) model "Maternal Role Attainment Becoming a Mother" was the theoretical chosen for this study. This model was chosen for this study because it focuses on the role of becoming a mother, the bond, and the connection. The framework also focuses on psychosocial aspects due to women experiencing vulnerability and challenges. The results continue to support the theoretical framework used initially.

Inputs	Outputs		Outcomes
• Scholarly research project included three committee members. • An Academic Writing Center was utilized for sentence structure, APA formatting, spelling, and grammar. • Academic instructors, group discussions, and course assignments assisted in gaining knowledge if the research process. • A review of the literature involved topics on infertility, miscarriages, recurrent pregnancy loss, miscarriages and infertility psychological effects, miscarriages treatment and management, polycystic ovarian syndrome, effects of miscarriages on health behavior, rural health care and infertility, specialty care for miscarriages in rural areas, and pregnancy related complications.	• Five interviews were performed with one open-ended question to begin the process. • Extensive research was performed prior to beginning the interviewing process. • The overall goal is to have a journal publication after the completion of this project.	• All women participated openly with the interview process. • There has been wonderful participation with all committee members through the duration of this project, with all questions answered thoroughly and quickly. • An Academic Writing Center was utilized for sentence structure, APA formatting, spelling, and grammar.	Long Term: • Publish in a journal or poster presentation • Improve the ability to locate and afford rural infertility healthcare

Table III.

Above is the inputs, outputs, and outcomes of the logic model for the study. This presents the relationship among the resources used over the course of the project, activities completed, inputs, outputs, and projected outcomes.

Limitations

The researcher attempted to not introduce any bias into the research design, during the interview process or in interpretation of the data. The instruments were appropriate for the project and there were no limitations within this aspect either. The interviews could have been obtained in any type of manner comfortable and this would not have affected the data negatively in any manner. Women were all forthcoming and truthful during the process and all interviews went smoothly. Scheduling of interviews was not a factor, there were adequate resources for the interviewing process.

Additionally, small sample size was another limitation to the study. With having five interview participants it can make it difficult to properly assess specific outcomes, especially related to progesterone and fertility care. Another limited included that of the geographical area, locating participants for the study was simple but it was also limited to a close area.

Implications for Future Projects and/or Research

The next steps in knowledge and practice improvement would be to interview women that are more obese that had miscarried, because none of the women who were interviewed were overweight. A better understanding of women who are overweight or obese who also miscarry or have RPL would be beneficial for future practice improvement as well. The design of the project, was appropriate in this researcher's opinion. Another item that might need to be gathered during the interviewing process

would be daily medications taken while trying to conceive or if they are smokers. A quantitative study developed from the information learned from this study might quantify phenomenon gleamed from this study.

Implications for Practice/Health Policy/Education

One important finding discussed several times is the difficulty obtaining the progesterone once pregnancy is confirmed in women at high risk of miscarriages. It would be beneficial for standing orders to be available at the patients preferred pharmacy so that once a woman has a positive pregnancy test, they are able to pick up a prescription. Another finding identified during the interviewing process was the participants feelings of grief and self-blame. As a health care provider there is a need to discuss these feelings with patients. In addition, these women may suffer from depression. Clearly, health care providers should plan to spend more time with these women to make sure they are not missing important emotional interventions that need to occur following a miscarriage.

Implications for Change

Microscale changes that could potentially change individual pregnancies would be to improve communication between patients and clinics regarding time of positive pregnancy test and the need for progesterone. This can be done in several ways it would be beneficial to have a standing order at the pharmacy, as previously mentioned and improvement in communication; if the patient calls the clinic the day, she has a positive test. The downside to calling the clinic is the lack of an available provider on weekends and holidays.

Another change would be investments into local clinics that would bring a specialist to local hospital clinics one day a week or twice a month to see patients. This could potentially bring a wide variety of patients to the area as well as cut down on the time spent for patients away from their families, jobs, and on the road. Patients would then be established with the provider and be able to be seen regularly by a specialist.

Conclusion

The overall goal of this study was to gain a greater understanding of the experiences and feelings of women in rural areas following multiple miscarriages. The data gathered through interviews with the study participants achieved this goal. In addition, the study contributed to the knowledge that progesterone is often difficult to obtain for women after they are pregnant. The distance many rural women travel to receive specialized fertility care was also an unexpected finding. It will also be important to share the knowledge learned from this study through presentations or publications to other healthcare providers.

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APPENDIX

Appendix A

INFORMED CONSENT

Understanding the Emotional and Treatment Impact of Recurrent Miscarriages for Women Living in Rural Medically Under-Served Areas

Dear Participant:

I am gathering information on the experiences of women who have had a recurrent miscarriage while living in a rural medically underserved area. It is important prior to agreeing to participation you are knowledgeable of the following:

1. The study is designed to explore and understand the experiences of women who have had recurrent miscarriages.

2. The study will take place during the Fall 2020 through the Spring 2021.

3. The principal investigator will be Whitney Dickerson (PSU RN-DNP student) along with co-investigator Dr. Janis Schiefelbein, professor in the Irene Ransom Bradley School of Nursing.

4. Interviews will be conducted, and the information will be recorded. If at any time during this interview you might feel uncomfortable you have the option of ending the interview. Participation and interviews will be kept confidential.

5. Any documentation pertaining to this study will be kept confidential and will only be accessed by the researcher and the faculty members involved in the study.

6. I understand this project is for research purposes and that my participation is completely voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent and stop participating at any time without explanation or penalty.

7. I understand that this study might be published, and if so, all information is confidential, and my identity will be kept private.

8. I have read and understand the information to me and voluntarily agree to participate in this study. I verify that my signature below indicates that I have read and understand this consent form and willingly agree to participate in this study under the terms described, and that my signature acknowledges that I have received a signed and dated copy of this consent form.

Participant name:

Participant signature: Date:

Witness to signature: Date:

For any questions or concerns please contact researcher Whitney Dickerson at whitneybrooks@gus.pittstate.edu or 620-249-0679, or sponsoring faculty member Dr. Janis Schiefelbein at jschiefe@pittstate.edu or office number 620-235-4441